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ABSTRACT

This publication is part of a series that reprints articles on a range of thematic issues published in the "Canadian Journal of Higher Education." This collection focuses on access to postsecondary education in Canada. After a preface and an introduction, the six papers are: "Studying Part-Time in Canada's Universities: A Social Change Perspective" (XIX:1, 1989) (Paul Anisef); "Grade Inflation and University Admission in Ontario: Separating Fact from Fiction" (XXV:3, 1995) (Francois R. Casas and Diane E. Meaghan); "Access to Higher Education in Canada" (XIV:3, 1984) (Neil Guppy); "Accessibility: Students with Disabilities in Universities in Canada" (XXII:1, 1992) (Jennifer Leigh Hill); "The Growth of the Canadian Education System: An Analysis of Transition Probabilities" (XVIII:2, 1988) (Peter C. Pineo and John Goyder); and "Education, Attitudes, and Language of Higher Education: Francophone Students in Northern Ontario" (XXIV:1, 1994) (Derek Wilkinson). (Individual articles contain references.) (SM)

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CENTRE FOR HIGHER EDUCATION RESEARCH AND DEVELOPMENT

CANADIAN SOCIETY FOR THE STUDY OF HIGHER EDUCATION

CHERD/CSSHE
READER SERIES
Number #5

REVISITING THE ISSUE OF ACCESS TO HIGHER EDUCATION IN CANADA

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The University
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REVISITING THE ISSUE OF ACCESS TO HIGHER EDUCATION IN CANADA

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REVISITING THE ISSUE OF ACCESS TO HIGHER EDUCATION IN CANADA

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Preface

The *CHERD/CSSHE Readers Series* represents a collaborative partnership of the Centre for Higher Education Research and Development and the Canadian Society for the Study of Higher Education. The series is intended to bring together the best articles that have been published in the *Canadian Journal of Higher Education*, in a range of thematic issues. It is hoped that the collection will provide a useful basis for the systematic examination of those issues, on the part of both researchers and practitioners; and that they will stimulate further investigation in those critically important areas of scholarship and practice.

Alexander D. Gregor
General Editor

Introduction

Over the course of this century, Canada has experienced phenomenal growth in all forms of postsecondary education. Among the OECD countries, Canada boasts the highest proportion of the population with educational credentials at the tertiary level (OECD, 1995). As Figures 1 and 2 illustrate, increases have occurred in both full- and part-time university and full-time community college enrolments.

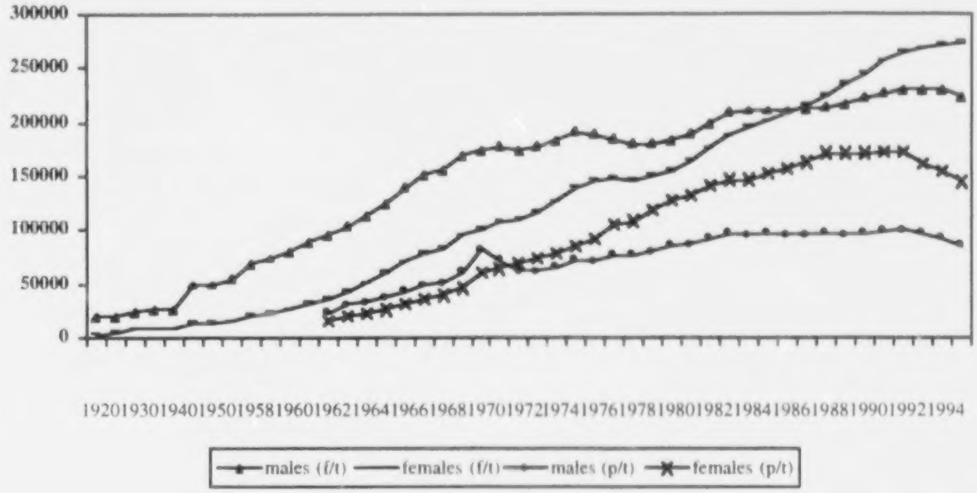
Steady increases in overall postsecondary enrolments may account for the recent shift in interest from access to research on attrition, retention, transfer, and graduation of students within the higher education system. From the 1980s onward, published research on the topic of access to higher education is comparatively scarce. Since its inception in 1970, the Canadian Journal of Higher Education has published 25 articles focusing specifically on the topic of access; of those, 9 (36%) have been published since 1990. In comparison, 41 articles — of which 60% have been published since 1990 — fall under the rubric of students' experiences within the postsecondary system and address issues of retention, attrition, transfer, student success, and graduation. Given recent trends in enrolment statistics and published articles, it may be tempting to conclude that we should no longer be concerned about access to higher education in Canada.

Although articles on access are few in number, they address several key questions, including: Who should have access to postsecondary education? At what cost? Based on what conditions and criteria? What factors influence postsecondary participation? What can we learn by examining enrolment patterns by traditional and non-traditional groups over time? In the introduction to this reader, I summarize each of the articles published in the *Canadian Journal of Higher Education* in relation to these questions and conclude that the findings of studies to date support the view that access will remain a central issue in higher education research and policy for the next millennium.

This review is organized under the following headings: Conceptualizing Access and Measuring Participation; Factors Influencing Access; and Participants in Higher Education. When appropriate, Statistics Canada data are employed to highlight post-secondary participation by various groups. In the final section —Research on Access for the Year 2000 and Beyond — the findings of research to date are used to determine whether and what kinds of further research on access are required for the 21st century.

Figure 1

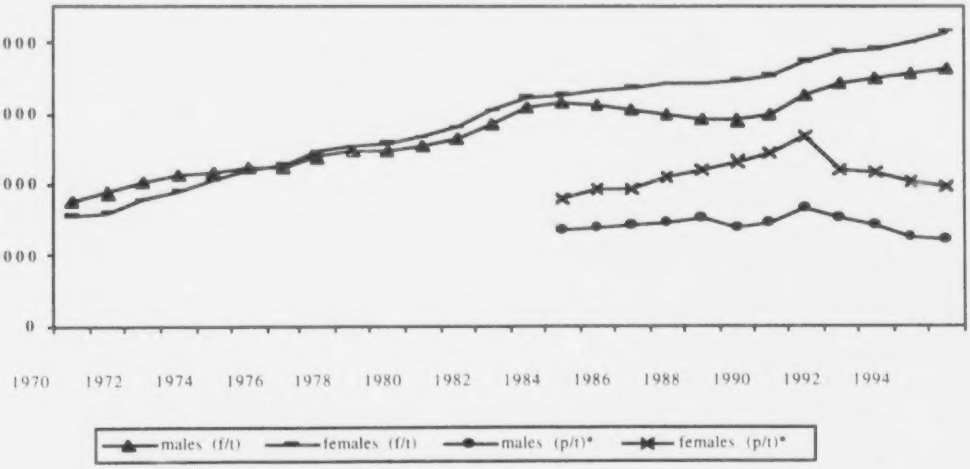
Full-time and part-time university undergraduate enrolment in Canada by sex, 1989-90 to 1995-96



Source: Statistics Canada, Cat. 81-229-XPB, Cat. 81-568

Figure 2

Full-time and part-time enrolment in community colleges by sex, 1976-77 to 1995-96



Source: Statistics Canada, Cat. 81-229-XPB, Cat. 81-568

CONCEPTUALIZING ACCESS AND MEASURING PARTICIPATION

Access to postsecondary education can be conceptualized in a variety of ways. Theoretical perspectives such as distributive justice or economic rationality provide the conceptual bases for considering issues of access. Access may be viewed through the lenses of equality of opportunity, equality of resources, and/or equality of results and terms such as "relevance," "merit," and "need" colour our views on access to such opportunities, resources, and results. The way in which conditions and criteria of access are specified shapes our responses to the question "Who has access to what?" (Burbules, Lord, & Sherman, 1982; Coombs, 1994; Ennis, 1976). Despite its importance, only one article in the *CJHE* deals explicitly with conceptual clarity of terms related to access.

Conceptual issues also drive the way in which participation in postsecondary education is measured. That is, who are included and how they are counted results in particular conclusions about the extent to which a postsecondary system is accessible. Three articles in the *CJHE* are concerned with issues of measuring participation in higher education and two discuss models of enrolment projections.

Conceptualizing Access

Reporting on the Third International Conference on Higher Education, held at the University of Lancaster in 1975, Pike (1975) observed that although considerable energy was spent discussing whether the goal of equality in higher education was compatible with "the maintenance of high standards of academic excellence" (p. 69), little effort was expended to reach consensus on a definition of "academic excellence" that was clear, consistent across different educational contexts, and relevant to institutions of higher education. Apparently undaunted by the lack of conceptual clarity, prominent scholars of higher education led discussions on the following topics: problems related to academic selectivity and maintenance of academic standards and excellence in systems of mass higher education (Trow); academic performance by high school seniors in countries with universal versus highly selective secondary systems (Husén); plans by the Dutch government to ensure equality of educational opportunity by eliminating the performance criterion from their lottery system; and a proposal to enhance equality of access and accomplishment in European higher education by abolishing selective entrance examinations and tuition fees, employing socio-economic information as a basis for admission, incorporating group and self-evaluation practices, and increasing student participation in university governance (Janne).

Measuring Participation

In a 1983 article by Foot & Pervin, they maintain that both cohort size and the enrolment rate must be considered when trying to determine actual student enrolments. They offer three complementary theories of educational demand to understand the determinants of postsecondary enrolment rates: "the consumption approach views enrolment as a current consumption decision; the investment approach views enrolment as an investment decision;

and the cohort size approach suggests that demographic conditions are paramount in decisions concerning post-secondary education demand" (p. 3). They caution that consideration of only one theory in isolation of the other perspectives results in a partial explanation of the factors influencing shifts in post-secondary enrolments. Instead, comprehensive explanations require that all three theories be considered together. In summary, postsecondary policy must be informed by multiple demographic and economic information.

Darling (1980) comments on the perils of employing the commonly used "participation rate" as a measure of determining changing enrolment rates. As a ratio determined by dividing the number of full-time students by the size of the 18–24 age group, the "participation rate" is flawed in that:

> 1. the numerator and denominator may be inappropriately combined.
> 2. the creation of an all purpose ratio serves to mask the failings and inconsistencies in the data used to create the numerators and denominators. (pp. 46–47)

As such, the participation rate is not a substitute for analyses of factors causing past events or considering the changing importance of current factors influencing participation. In addition, comparability of data used in trend analyses is critical when monitoring enrolment patterns. Darling remarks that "in examining enrolment data one is tempted to think that the published statistics are perhaps better a statement of how higher education was organized in the particular year than they were a statement of how many students were engaged in post-secondary education" (p. 41).

In a similar vein, Vanderkamp (1984) advises that explanations of the demand for university education based on perceived increased employment prospects and greater earning potential must be tempered by other factors such as cohort size. Changes in tuition fees, changes to student financial assistance schemes, and unemployment rates may also influence who attends university. When attempting to predict enrolments by foreign students, additional factors such as currency fluctuations and changes in immigration policies and patterns must also be considered. Also, the participation rate does not account for provincial differences in educational systems, out-migration to other provinces and countries, delayed university entry, and shifts in full-time, part-time and graduate enrolment patterns. He concludes that "looking into the future becomes even more difficult since the future path of a number of the factors identified is not predictable with a great deal of certainty. Nevertheless, looking into the future is a good way of focussing our ignorance and uncertainty" (p. 60).

Two articles by Guerin (1974, 1975) discuss effective models for projecting university enrolment. In relation to access, the author criticizes models that focus only on entry characteristics of students and neglect to consider the factors which influence student movement through and out of the university system.

FACTORS AFFECTING ACCESS

Numerous psychological, sociological, cultural, and economic factors influencing access to and participation in higher education have been identified in the research literature. These factors include individual characteristics such as gender, ability, educational achievement, aspirations, expectations, and family background. Institutional factors relevant to access include curricular streaming or tracking, guidance organization, postsecondary admission and selection rules, geographic availability, and study finance (see Härnqvist, 1978 and Andres 1992 for comprehensive reviews). The *CJHE* has published 10 diverse articles on the factors affecting access. By employing different theoretical perspectives and assumptions, these articles illustrate how two opposing views — social justice and economic efficiency — inform the debates around issues of access.

Economic Factors Affecting Access

Four articles tackle the topic of financing higher education. Two articles focus on private rates of return to higher education and the remainder propose alternative student financial assistance programs.

In an article entitled, *Canadian Universities: Who benefits and Who Pays?* Meng and Sentence (1982) analyze data from the Postsecondary Student Survey of 1975 (PPSS) to determine the costs and benefits of a university education by different parental income categories. Although they demonstrate that the financial returns to a university degree greatly exceed the costs and is hence a "good thing," this conclusion is mitigated by the finding that the highest parental income group benefits the most, and lower income groups the least, from a university education. Hence, "the flow of benefits and costs within the subset of the population that goes to university is decidedly regressive in nature" (p. 55). They argue that in order to create a university system that is distributionally neutral, changes in either financing universities or in the distribution of benefits derived from a university education are required. The regressivity of financing could be corrected by either reducing taxes to lower income groups or increasing contributions by users of the system. However, without additional policy initiatives such as student financial assistance or the establishment of a voucher system, they suggest that the latter option would likely result in reduced equality of opportunity of access by lower income groups. Regarding the distribution of benefits, a neutral system would have to change program enrolment patterns by different groups. They conclude by noting that while changing access requires some type of subsidy, "a demand oriented approach to balancing benefits implies a degree of equality of outcome that our society may not agree with" (p. 56).

In an article published in 1996, Stager considers the topic of private rates of return in relation to the costs of acquiring higher levels of education. He begins with the following assumption: "because students' university enrolment decisions are influenced by expected returns to their educational investment, policy decisions should be informed by calculations of such returns" (p. 1). He argues that: a) changes in the expected rate of return to postsecondary education provide a better account of the variation in enrolments than do changes in either tuition fees or levels of family income, and b) increases and declines in university enrolments (including participation by women) can be explained by students' expected rates of return to investment in university education.

Stager agrees that the total rates of return justify public support of postsecondary education; however, he claims that the because private rates of return are higher than any other form of personal investment, and because tuition fees account for a small portion of the total cost of attending university, individuals should bear a greater proportion of the costs. Increasing the private share of the cost of university study would have a minimal impact on university enrolments. He also argues for a differential fee structure for university programs, based on their expected rates of return on investment.

Two articles focus on student financial assistance programs, but offer dramatically different proposals to redress the shortcomings of current programs. Schaafsma (1990) in a critical examination of the Canadian Student Loan Program (CSLP), concludes that the current system violates the principles of equity. First, he maintains that by basing the variable portion of the parental contribution on the number of weeks of full time attendance, the principle of horizontal equity is violated. That is, in a system promoting horizontal equity, the added parental contribution would be the same for all families with an equal ability-to-pay; hence, length of the academic year would not be a relevant consideration. Second, because added parental contributions are based on income classes rather than actual income, the principle of vertical equity is violated. Vertical equity is defined as "the acceptable relative treatment of individuals in different circumstances" (p. 11). This violation could be corrected by substituting the contribution table based on income classes with a formula to determine the added parental contribution. Together with high marginal parental contribution rates and the effect of inflation, inequities in the CSLP place considerable financial burdens on middle and upper income families; also, the former serves as a disincentive to earn extra income. Schaafsma points out one other major problem with the CSLP. Because students are deemed to be dependents of their parents, students with parents who are unwilling to disclose financial information are excluded from participating in the CSL program. He concludes that "the CSL program can be substantially improved by . . . simply permitting the government to guarantee student loans on the basis of financial need independent of parental income and then, depending on parental income, to subsidize all, part, or none of the interest cost while the student in enrolled full-time and for six months thereafter" (p. 17).

Rather than suggesting revisions to the current CSLP, McDonough & Wright (1998) propose an income-contingent repayment of loans (ICR). Asserting that "the economic rationale for full cost fees is that the private benefits exceed the private costs even when full costs are considered" (p. 46), they offer a strategy for a Private Income Contingent Repayment Plan (PP) which "promises to eliminate virtually all accessibility problems related to financial constraints" (p. 41). This strategy would involve the following: all students attending accredited postsecondary institutions would be eligible for loans to cover the full cost of tuition and a fixed allocation for living expenses; loans would be negotiated at private financial institutions and would accumulate interest throughout the study period; loan repayment would begin when the postsecondary graduate earns enough income to qualify for payments; the maximum repayment period is 30 years; repayment of the loan commences when the graduate's "after tax income is greater than the after tax earnings of a full time minimum wage earner" (p. 51); loans are treated as investments in human capital and are fully tax deductible; during periods when the individual is not in the labour force (e.g., due to unemployment, childbearing, graduate study) interest would continue to compound. The public sector would guarantee the loans and provide private sector lenders with information about the income and location of borrowers. In the case of default, both the private financial institution and government would play a role. The authors assess the feasibility of the Private Income Contingent Repayment Plan through analyses of data from the 1992 Survey of 1990 Graduates and the 1985 Census.

McDonough & Wright concede that under the PP, postsecondary graduates will incur greater debt; this, in turn, may lead to a decrease in demand for postsecondary education, the elimination of programs with low expected rates of return, and increased demand for " more practical and labour market oriented courses" (p. 68). However, they maintain that "investment in PSE would still be the best long term financial opportunity for most. Moreover, accessibility need not be constrained by financial considerations and those not formerly able even to contemplate PSE could enter the arena" (p. 68).

Selection Criteria and Access

Admission into Canadian institutions of higher education is determined almost exclusively on the basis of academic achievement and program completed in high school. As a system of contest mobility (Turner, 1960), admission rules are determined by meritocratic principles. Four articles in the CJHE entertain the topic of selectivity. Of these, three suggest that alternative selection criteria may provide a more equitable basis for admission of students to universities.

In 1975, Pollock, Bowman, Gendreau, and Gendreau document the findings of an experimental study where Grade 13 applicants (n = 2,593) were randomly assigned to one of five admission groups: open admissions; interview; teacher recommendation; Grade 13 academic achievement; and Service for Admission to Colleges and Universities (SACU) tests. A final category — traditional admission — was used to admit those with Early Admission status based on interim Grade 13 results and individuals who raised their Grade 13 averages through final examinations. Two measures of academic success — GPA and "categorical success description" (clear success, probationary success, or rustication[1]) —— were calculated for all students completing a full academic year.

Several fascinating findings emerged from this study. First, there were significant but low correlations between GPA standings at the end of first year and Grade 13 grades, SACU test scores, teacher recommendations, and personality tests; correlations were somewhat higher for females. Second, students in the personal interview group had higher rates of acceptance than the other groups. Third, students admitted by traditional university methods earned the lowest GPAs after completion of first year and experienced the highest probation and rustication rate. Males admitted on the basis of interim Grade 13 marks and girls for performance during personal interviews earned the highest GPAs. Fourth, and most notable, was the finding that final first year GPAs, withdrawal, probation and rustication rates for those students belonging to the open admission group were comparable to GPAs of the other five groups. There were no statistical differences on the relevant variables between the open admissions group and any of the other groups (including the Grade 13 group). Finally, 81% of students deemed "unqualified" by more conventional admissions standards successfully completed their first year of university study. Pollock, Bowman, Gendreau & Gendreau conclude that "the very high percentage rate of successful completions of the academic year by this subgroup and also by the open admissions group gives pause for serious reflection regarding traditional admission procedures and the human factor involved" (pp. 14–15).

In a study of admission practices at Laval University, Héon, Cloutier, and Bélanger (1986) sought to determine whether the inclusion of the criterion "experience" enhanced the chances of admission for adult students. By analyzing the files of 400 students, they concluded that experience as a criterion was most often used together with evidence of past academic achievement.

In more recent study, Casas and Meaghan (1995) assessed the validity of the widespread belief that Ontario OAC students employ "grade enhancing practices" to raise their grades and "thereby boost their chances of admission to one of Ontario's sixteen universities" (p. 50). These practices include one or a combination of the following: subject grazing; school grazing; repeating; sampling; slowtracking; slumping; and upgrading. These practices are of concern because they raise "a number of issues around the efficiency and equity of the current university admission system, as well as having significant pedagogical and budgetary implications for Ontario high schools" (p. 51). By analysing the entering averages of first year students who were full-time high school students in Ontario the previous year, the authors demonstrated that between 1983 and 1993, entering averages of 90% of all registered applicants had increased from 65% to 75% and that grade inflation was less pronounced for grades in the 75th percentile. Over this time period, the median university entering average increased by 3, and the mean by 2.6 points. More detailed analyses revealed increases in both the size of the pool of applicants and their average grades tended to raise the cutoff and median entering marks; however, increases in the number of admitted students reduced cutoff and median entering marks. Also, increases in entering averages differed by program which could be explained by changes in the number of applications to a program, expansion of the program itself, or the addition of programs within the higher education system. The cutoff entering average also increased at all but one university by a weighted average of 6.1 points. The authors conclude that the findings of this study do not support the perception that grade inflation in high schools has led to rapid increases in university admission standards. As a result, students may be extending their high school stay on the basis of inaccurate information.

In a very recent article, Bélanger and Mount (1998) investigated the attitudes of universities toward Prior Learning Assessment and Recognition (PLAR). Through PLAR, previously acquired skills, knowledge and attitudes are formally assessed and recognized through means such as challenge examinations and portfolio assessments. Although PLAR is not a new concept, it enjoys a relatively short history in Canadian institutions of higher education. and community colleges have more readily embraced PLAR as an idea and as a practice. In this study, Bélanger and Mount surveyed university directors of institutional research and directors of continuing education at 25 Canadian universities to determine their attitudes toward PLAR. Results demonstrated that although medical/doctoral universities were the least receptive to PLAR and did not consider it to be a priority, no university in this study agreed with the statement "PLAR is NOT at all appropriate at the university level" (p. 107). The authors conclude that "this study demonstrates both an openness of the university community towards the PLAR concept and a reluctance to implement it within its own domain" (p. 110). In addition, although students' previously acquired skills, knowledge and attitudes should be recognized, "the black box of postsecondary courses and credits must become judiciously porous" (p. 117).

Sociological Factors Affecting Access

Selectivity rules serve a critical gate keeping function, and as such, determine who will ultimately attend postsecondary institutions. However, as Dennison (1974) points out, numerous factors result in a self-selection — or self-elimination — process by students that commences long before secondary school graduation. Five studies published in the CJHE focus on the influence of several sociological factors influencing access to higher education.

Guppy (1984) advances three hypotheses — the constant gap, the steadily declining gap, and the accelerating declining gap — to determine differences over time in university and community college participation rates. Analyses of 50 years of data (from the 1920s to the 1970s) from the Canadian Mobility Study revealed an overall reduction of the influences of gender, language group (English or French), and socioeconomic background on postsecondary participation over time, supporting the steadily declining gap hypothesis. However, although women were more likely to participate in postsecondary education at every time period, disparities in university degree attainment persisted over time. The greatest convergence of differences occurred between French and English language groups. Finally, the proportion of eligible Canadians who reported receiving university degrees increased only slightly between cohorts born in the 1910s to the 1940s. Because the general reductions in socioeconomic disparities are largely due to the expansion of the non-university system, Guppy concludes by questioning whether "a dual higher educational system [has] evolved in this country" (p. 89)? Moreover, although access to higher education has increased over time, the extent of democratization in higher education since the 1920s remains unclear.

In a study published in 1988, Pineo & Goyder use national data from Canada and the United States to determine the effects of ascription (or social background factors) on educational attainment. Employing "transition probabilities" — the probability that individuals completing one level of education will enter the next level — and regression analyses, they demonstrated that ascription appears to be stronger in Canada than the US, and that in Canada it appears to be increasing rather than decreasing.

Guppy and Pendakur (1989) examine whether factors affecting access also influence the types (community college vs. university) of institutions attended and the nature (part-time vs. full-time study) of attendance. Using 1974–75 and 1983–84 national survey data of postsecondary students, they demonstrated that: more women and students from less educated families study part-time; by 1983–84, although overall, gender differences in university compared with community college differences disappeared, university participation by women from more educated families surpassed participation by men; and parental education had a modest effect on program of study. They conclude that elimination of one ascriptive characteristic — gender — which in the past has been related to postsecondary participation, resulted in the exacerbation of another form of ascription — family origin. That is, women participating in postsecondary education in 1983–84 were more likely than males to have parents with higher levels of educational attainment.

Although geographic location has long been identified as one of the factors affecting whether and where youth participate in postsecondary education, only two studies published in the *CJHE* consider whether access to higher education differs between urban and rural groups. O'Neill (1981) examined the effect of community of residence on the educational and occupational postsecondary aspirations of high school seniors from five different demographic settings in southern Ontario to determine whether, when controlling for other factors, community of residence significantly influenced students' postsecondary aspirations. Regression analyses of data collected on 750 Grade 12 students from the Durham region demonstrated a significant positive relationship between postsecondary aspirations and size of community of residence. However, rural non-farm students had the highest levels of postsecondary educational aspirations, followed by students from the small town, city, village, and rural farm groups. Correlations between occupational aspirations and community of residence were not significant. The author offers two interpretations of the results. First, whereas "continuous indoctrination into traditional rustic values, coupled with parental support" (p. 61) may discourage students from village and rural farm areas from aspiring to postsecondary study, constant exposure urban life by non-farm rural youth may encourage such aspirations. Second, since a considerable proportion of urban dwellers in this study may have recently migrated from rural areas, homogenization of the various geographic locations into a "rurban" rather than rural or urban category may have occurred.

More recently, Looker (1997) analyzed longitudinal survey data of Hamilton, Halifax and rural Nova Scotia youth to determine the factors respondents identified for making postsecondary choices and the postsecondary education actually attained by gender and sample area. In 1989, while still in high school, less than 20% of respondents expected to complete high school or less, and 61% expected to complete some university education. Analyses of 1992 and 1994 data revealed that postsecondary attainments were somewhat lower than expectations reported several years earlier. By 1992, approximately one third had attended non-university institutions and only 50% had attended university; by 1994 this latter figure rose slightly to 54%. Only one third of the youth had completed a university degree by 1994. Analyses by gender and sample area revealed that both influenced respondents' educational plans and attainments. In 1989, girls were more likely to have higher aspirations than boys; however, because fewer girls attended university, by 1994 gender differences were eliminated. Significant differences in expectations and postsecondary attainments were revealed by sample area. More youth in Halifax than Hamilton or rural Nova Scotia expected to attend university. When compared with rural NS and Hamilton youth, more Halifax youth completed university degrees. When asked about the factors influencing their decisions in 1994, the majority of respondents reported high school grades, courses taken, and attitudes toward school as positive. Only half reported that their knowledge of postsecondary programs facilitated their decisions. Whereas the cost of postsecondary education was identified by a third of students as a negative factor, distance, access to accommodation, and marriage and parenting were not considered to be important influences.

PARTICIPANTS IN HIGHER EDUCATION

Despite predictions in the 1970s and 1980s of declining numbers of college and university-age students, full- or part-time enrolments have continued to increase (see Figures 1 & 2). Much of the growth has been attributed to increased access for non-traditional students, evidenced mainly by higher numbers of women taking part in postsecondary education, and to a lesser extent, students from different ethnic and socio-economic backgrounds, disabled individuals, and older students. The question "Access by whom?" can be addressed by examining enrolment patterns by these groups.

In total, seven articles focussing on participation by various groups have been published in the *CJHE*. However, as the following review reveals, there are substantial gaps in the *CJHE* literature on this topic.

Women in Postsecondary Education

Clearly, increased participation by women in institutions of postsecondary education has been phenomenal. Between 1960 and 1985 enrolments by women increased steadily, and by 1988, women's enrolment had surpassed men's. Part-time enrolment of women has also increased dramatically. By 1995–96, more women were enrolled in both full-time and part-time undergraduate university programs than men (see Figures 1 & 2).

Seven studies published in the *CJHE* either employ sex as a dependent variable or conduct analyses by sex (Anisef, 1989; Guppy, 1984; Guppy & Pendakur, 1989; Looker, 1997; O'Neill, 1981; Pineo & Goyder, 1988; Pollock, Bowman,Gendreau & Gendreau, 1975).

However, several questions, such as — Why do more women than men continue to attend university and community college part-time? Do enrolment patterns in various postsecondary programs continue differ for males and females? Are issues of access the same for both groups? For example, how would student financial schemes such as that proposed by McDonough and Wright (1998) affect access for women and men?— remain unanswered or require reconsideration.

Older Adult Learners

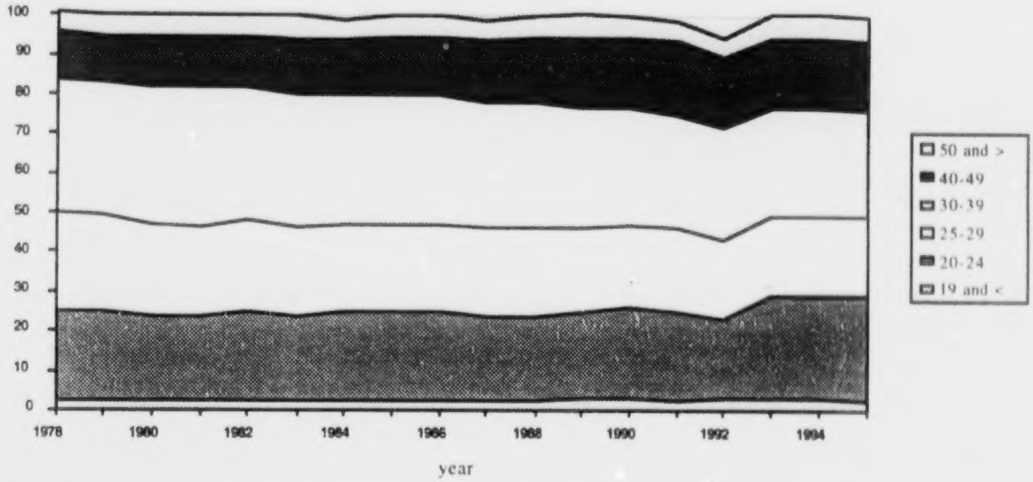
Recent Statistics Canada data (1997) indicate that the majority of full-time postsecondary students (92%) are between the ages of 18 and 22. Students 25 years and older account for only 7% of full-time enrolments in postsecondary education.

As Figure 3 indicates, the majority of part-time university participants are comprised of individuals over the age of 25. However, in the last five years reported in Figure 3, the proportion of "older" part-time undergraduates has declined. Increases are evident only in the 40–49 age cohort (from 11% in 1976–77 to 18% in 1995–96).

Only one article specifically considers older individuals as potential clientele for universities. This article, authored by Pitman (1974), was written in an era of steady-state enrolments, amid predictions of declining numbers by Ontario high school graduates, and in reaction to a recommendation in *The Learning Society – Report of the Commission on Postsecondary Education in Ontario* that in order to assure access to every potential

Figure 3

Percentage distribution of part-time university undergraduate enrolment by age, 1978–79 to 1995–96, Canada



Source: Statistics Canada, Cat. 81-229-XPB and Cat. 81-568
Note: Published statistics for 1992-1993 total 95% (Statistics Canada Cat. 81-229-XPB, 1992-93.

mature student in Ontario "there should be a massive expansion of part-time adult education with store-front universities in smaller communities and an open university associated with educational television and other technological developments" (p. 75). Pitman posits that although "it would be tragic if financial exigency led universities to develop a veritable circus of activity with the aim of attracting income, but with little relevance to the institutions' fundamental purpose, or the skills and experience of those who have been gathered to form their faculties" (p. 76), it could be academically justifiable to reach out to groups currently not served by the university system. One such group, according to Pitman, may be older and retired individuals. As an example, he describes the *Retired Citizens in Residence Program* at Trent University, a week long seminar that brought together 30 retired men and their wives. Each morning participants participated in lectures tailored for this program; in the afternoons, they were free to attend regularly scheduled classes. Exposure to other elements of campus life, such as dining with full-time traditional students, was encouraged. Evenings were spent discussing the day's events and offering recommendations to the organizers. It was concluded that although only small numbers of retirees would likely enrol in credit programs at universities, residential programs with a specialized, interdisciplinary, problem-based focus offered over a short, intense period of time may be appealing to this group.

Distance learning provides another avenue for enhancing access to older learners. Daniel & Smith (1979), in an article entitled *Opening Open Universities* described how increasing demand for student places, particularly part-time adult students, led to the establishment of two open universities in Canada — Athabasca University in Alberta in 1972 and Télé-université project at the University of Quebec in 1972. Both universities shared two common features: "they are designed to serve working adults, usually without any academic prerequisites for entry, and they involve the delivery of instruction at a distance" (p. 64). By 1977–78 approximately 12,000 individuals from diverse backgrounds and located across the province were enrolled in one or more Télé-université courses. In the same year, Athabasca University reported 1,800 enrolments; this figure was expected to double in the following year. Athabasca attracted students with higher educational levels, primarily women and adults residing in rural areas.

Part-time Students

Part-time participation in universities and community colleges has expanded considerably over the past decades (see Figures 1 and 2, earlier in this review). However, only two studies (Anisef, 1989; Thompson & Devlin, 1992) focus on issues of access for part-time students.

Noting that in the period between 1965 and 1985 part-time enrolment in university study increased by 300% for women and 158% by men, Anisef (1989) employed data from the 1973–74 and 1983–84 National Graduate Surveys to examine the changing influence of demographic, regional, socio-economic, and financial factors on registration status. This study was based on the assumptions that: (1) the number and diversity of part-time students would likely grow and (2) by the 1990s the "traditional" university student (i.e., one who directly enters from secondary school) as the majority would be replaced with an older, female clientele. Findings revealed that between 1973–74 and 1983–84, the influence of region on registration status was reduced for both males and females and age was a statistically significant factor for male and female undergraduates (i.e., part-time enrolees were older). Marital status and dependent children influenced registration status with greater numbers of married men and women enrolling part-time in the latter time period. Higher parental socio-economic status was significantly related to part-time study and this increased over time. In 1973–74, for both males and females, applying for a government loan had a negative impact on enrolling part-time. By 1983–84, there was a positive relationship between applying for student financial assistance and postsecondary study.

Building on findings of Anisef (1989) and others, Thompson & Devlin (1992) sought to determine the extent to which universities accommodated part-time students. The authors speculated whether the dramatic increase in part-time study at universities occurred "because of or in spite of organizational conditions intended to facilitate access" (p. 59). Questionnaires designed to solicit information about enrolment patterns, the extent to which programs of evening and weekend courses were decentralized, and institutional practices in relation to part-time students, were sent to a non-representative sample of seven universities.

Although the authors qualify their findings as "both empirical and impressionistic" (p. 62), they found that the consequences of a decentralized system of evening/weekend courses were unclear. Moreover, several confounding variables interfered with interpretation of the data, including: inconsistent definitions of "what constitutes part-time study"; the interrelationship between the number part-time students and the number of evening/weekend courses; insufficient student profile data; and lack of sufficient information on which to determine demand for evening/weekend courses. Despite the "fragmentary" and "inconclusive" nature of the data, Thompson & Devlin conclude that "part-time students, and in particular those who are unable to attend during the day, are not particularly well-served by Canadian universities; that institutions are tolerant of part-time students but make little attempt to recruit them actively" (Thompson & Devlin, 1992, p. 70).

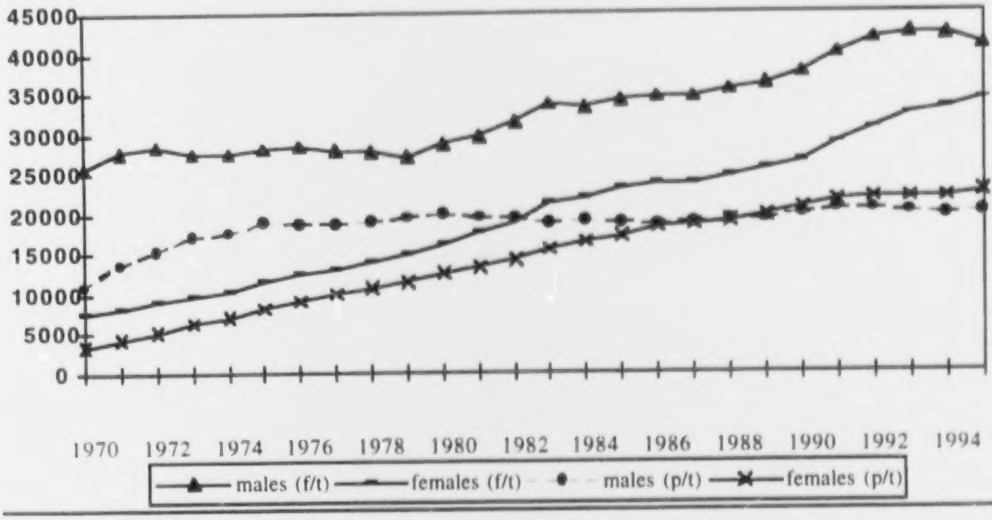
Graduate Students

As Figure 4 reveals, full-time graduate enrolments have risen at a steady rate. Since 1983–84, whereas part-time graduate student enrolment by women has increased considerably, participation by men has been static.

Figure 4 raises several questions about access to graduate programs. Could limited access to part-time graduate programs explain part-time participation patterns? Is acceptance into full-time graduate programs — including access to scholarships — still biased towards males? To what extent does access to graduate study vary by discipline? To date, none of the articles in the *CJHE* has addressed issues related to access to graduate study.

Figure 4

Full-time and part-time graduate enrolment, 1970–71 to 1995–96 by Sex, Canada



Source: Statistics Canada, Cat. 81-229-XPB and Cat. 81-568

Students with Disabilities

Very few studies have examined the enrolment of students with disabilities in Canadian postsecondary institutions. In a document released by The Council of Ministers of Education entitled, *Opportunities: Postsecondary Education and Training for Students with Special Needs* (1987) access and retention issues pertaining to students with disabilities were highlighted. According to this report, students with special needs remain underrepresented in higher education; however, enrolments have increased for this group.

Only one article in the *CJHE* examines the degree to which universities across Canada were dealing with issues of access and retention for students with disabling conditions. By surveying the Coordinators of Services for Students with Disabilities at 46 major universities, Leigh-Hill (1992) endeavoured to ascertain the extent to which: (a) specialized services were provided to enhance success by disabled students, and (b) campuses were physically accessible.

The findings revealed that both small and large institutions were attempting to accommodate special needs students by offering a wide variety of services including general advising and support staff designated to assist students with disabilities. However, for certain disability groups, "accessibility continues to be a problem at both small and large universities" (p. 72). Particularly noteworthy was the finding that differences between large and small universities was not great; however, although more students with disabilities attended small universities, these institutions provide fewer resources and services.

Leigh Hill (1992) concluded that overall, universities have embraced this issue and are attempting to improve both facilities and resources.

Participation by Minority Groups

Access to higher education by ethnic, cultural, and racial minorities has been identified as a problem in numerous Canadian policy documents. Although the American body of higher education is replete with studies on the topic of access by minority groups, few Canadian studies exist and none have been published in the *CJHE*. The lack of research is compounded by the availability of data containing meaningful information about minority groups.

Participation by Language Groups

Only two studies consider the issue of access by individuals from different language groups. Guppy's 1984 article, summarized earlier in this review, concluded that over a 50 year time span, differences in university participation by English and French groups had declined.

Wilkinson (1994) investigated why a small proportion Francophones in North Eastern Ontario continue to university studies, and of those who enrol, continue their studies entirely in English. From an administrative perspective, low demand for Francophone courses presents an ongoing challenge for bilingual universities to offer a range of offerings for Francophone students. Hence, low enrolments may lead to the diminishment of academic French culture in North Eastern Ontario.

Factor analyses of responses to questions about attitudes toward French and English by 1,586 Francophone students revealed that "two factors separate those who plan to continue in French: belief in the superiority of English culture and belief in the pleasurableness of French. Three factors separate those who plan to continue in English: belief in the non-importance of French, belief in the dominance of English, and belief in the inadequacy of their French" (Wilkinson, 1994, p. 39). He concludes that in order to motivate students to maintain their Francophone culture, school policies should focus on countering the belief that English is dominant, emphasizing the practical use of French at both the secondary and postsecondary levels, and instilling confidence in students about their ability to speak French.

RESEARCH ON ACCESS FOR THE YEAR 2000 AND BEYOND

Until the late 1980s, national attention on issues of equality of opportunity served to promote postsecondary participation in Canada. Access policies were shaped primarily by the long held view that the most disadvantaged were those with the least education and that the route to improved life chances was through the educational system. By the mid- to late 1990s, the "access for all" sentiment had been replaced by debates around issues of education and employment in relation to economic rationality and efficiency. In the current era of reduced funding for postsecondary education (largely due to decreased federal transfer payments to the provinces), restricted labour markets, and increasing demands that postsecondary institutions be held more accountable, the policy discourse has been delimited to discussions about the types of skills needed in the new economy, the forms of postsecondary education required to acquire these skills, and an emphasis on the private and public rates of return to investments in postsecondary education.

As current and future economic, political, and social winds shape the answer to the question "Who should have access to postsecondary education?" the questions posed at the beginning of this introduction will continue to be relevant in the 21st century and existing publications should continue to provide valuable insights into policies and practices related to access. Financing issues such as tuition fee increases and proposed changes to student financial assistance may have the greatest impact on the criteria and conditions of access by determining what it means to "have a chance"[2] to participate in higher education.

The articles published in the *CJHE* since the 1970s and summarized in the introduction to this reader demonstrate that the topic of access is complex and multidimensional. To capture and comprehend the topic in its entirety, various approaches to the study of access will be required. As numerous authors advise, careful analyses of factors historically affecting access, coupled with sage predictions of current and changing conditions, will provide policy makers with useful information about the potential effects of proposed policies and practices on the postsecondary system. Ongoing trend analyses of enrolment patterns to monitor the extent to which changes to postsecondary systems (such as increased tuition fees) promote or limit entry to postsecondary institutions by currently just-represented and under-represented groups will provide a retrospective evaluation of the effects of new policies. Finally, rigorous conceptual and empirical research on access issues for the millennium should be encouraged.

Two additional questions must take precedence in any debate on access. Without clear answers to the questions — *What is the purpose of higher education?* and *Who is higher education for?* — federal, provincial, and postsecondary institutional policy initiatives may instead be based on pragmatic and short sighted assumptions, largely driven by political considerations which neither benefit the participants of higher education nor society which is expected to gain from the investment.

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Notes

[1] This term refers to the practice of temporary dismissal from the university to provide students the opportunity to "retire to the country" to reflect on their futures.

[2] See Burbules, Lord & Sherman (1982).

Studying Part-Time in Canada's Universities: A Social Change Perspective

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ABSTRACT

Part-time university undergraduate students' participation in the Canadian post-secondary education system has grown substantially over the past several decades. This growth raises questions concerning the factors influencing students' decisions to enrol full- or part-time. The research presented here is based on the 1973-74 and 1983-84 National Postsecondary Student Surveys conducted by Statistics Canada and examines the changing influence of demographic, regional, socioeconomic and financial factors on registration status.

The results indicate: (1) a diminishing impact of regional forces in choosing part-time registration status; (2) a dramatic increase of women in part-time studies (particularly older women); (3) that being married and having dependent children has become significantly less of a barrier for enroling part-time; (4) that students from more educationally advantaged backgrounds were more likely to register full-time in both survey years and the effect of parents' education remained unchanged across the surveys; (5) students that either applied for a government loan or borrowed to finance their studies were more likely to enrol full-time; this pattern was clearer for both sexes in 1983-84 than in 1974-75.

These detailed findings are evaluated in terms of social changes in Canada, particularly with respect to women's increased participation in education and the labor market.

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While part-time university students constitute a relatively new clientele in higher education, their number and diversity is likely to grow, increasing our need to acquire new and more detailed information.

RÉSUMÉ

L'importance des étudiants universitaires de premier cycle à temps partiel dans le réseau canadien de l'éducation postsecondaire s'est grandement accrue au cours des dernières décennies. Cette croissance soulève des questions quant aux facteurs influençant la décision des étudiants de s'inscrire à plein temps ou à temps partiel. La recherche dont il est ici question se fonde sur les enquêtes nationales sur les étudiants du niveau postsecondaire réalisées en 1973-1974 et 1983-1984 par Statistique Canada. Elle étudie l'évolution de l'influence des facteurs démographiques, régionaux, socio-économiques et financiers sur le genre d'inscription.

On a tiré les conclusions suivants. 1) Les facteurs régionaux ont de moins en moins d'influence dans la décision de s'inscrire à temps partiel. 2) Le nombre de femmes (particulièrement de femmes plus âgrées) a fortement augmenté chez les étudiants à temps partiel. 3) Le fait d'être marié(e) et d'avoir des enfants à charge est devenu un obstacle beaucoup moins important à l'inscription à temps partiel. 4) Les étudiants provenant de milieux ayant reçu une meilleure éducation étaient plus susceptibles de s'inscrire à plein temps, dans les deux années d'enquête, et l'influence de l'éducation des parents est demeurée la même d'une enquête à l'autre. 5) Les étudiants qui avaient soit demandé un prêt du gouvernement soit contracté un emprunt pour financer leurs études étaient plus susceptibles de s'inscrire à plein temps, et cela se vérifiait davantage en 1983-1984 qu'en 1973-1974, chez les étudiants des deux sexes.

Ces conclusions détaillées sont évaluées sur le plan des changements sociaux au Canada, particulièrement pour ce qui est de la participation accrue des femmes à l'éducation et au marché du travail. Alors que les étudiants universitaires à temps partiel constituent une clientèle relativement nouvelle de l'éducation supérieure, leur nombre et leur diversité continueront vrais semblablement à augmenter, rendant ainsi encore plus grand notre besoin de nouveaux renseignements plus détaillés.

INTRODUCTION

Canada is experiencing a change from an industrial to a knowledge-based society where many newly created jobs are in knowledge processing, handling and the services sectors. Dramatic, even extraordinary, growth in postsecondary education over the past quarter century reflects or correlates with this transition. Between 1965 and 1985, full-time university and college enrolments multiplied by a factor of 4.10 to 1,120,500 and expenditures totaled $9.3 billion (Watts, 1987).

Another significant development has been the growth in part-time university enrolments in the last two decades, increasing almost 300%, from 73,000 in 1965 to 285,000 in 1985 (Belanger & Omiecinski, 1985). In contrast, total full-time enrolments increased by 179% during the same time period.

Belanger et al. (1982) has presented an historical review of participation in part-time university studies from 1939 to 1979. This review shows that women outnumbered men in the part-time student population in the 1940s and continue to do so. By 1984, 62% of the part-time undergraduate population were comprised by women. Furthermore, the part-time student population has broadened in age and continues to age. In 1971, 44% of part-time students were 30 years of age or over; by 1984 this proportion increased to 64%.

Bertrand (1982) concludes that the 'traditional' university student (that is, one who directly enters from secondary school) will no longer be in the majority by the 1990s. Rather, a different population — one that tends to be older and female and whose periods of study extend over a number of years and often across different disciplines — is entering Canadian universities in greater numbers.[1] Campbell (1984) urges university administrators to shift their focus on preoccupation with traditional students and formulate policies that will better serve the needs of a 'new majority' of adult learners. The Levy-Coughlin Partnership (1981) in a survey of some 4000 part-time university students develops a picture of this new majority. They are well-educated, career-oriented individuals with a persistent commitment to education. About half of those surveyed had aspirations to professional or graduate school education and most were generally satisfied with their educational experiences. Perhaps the most significant barrier perceived was the availability of time to pursue their education because of work and personal commitments.

This literature review shows that Canadian research studies pertaining to part-time undergraduate university students have been almost exclusively descriptive the exception being Robert Pike's study of part-time studies, in Ontario (1978). The increased numbers of part-time, older, female students raise a number of important issues and researchable questions. For instance, what sociological factors help us understand the decision to study on a part-time basis? Has the influence of these factors altered over the decades? What socioeconomic and demographic changes in Canada have influenced the decision to study part-time? In 1965, for example, 26% of the total university population was composed by part-time students. Twenty years later this increased to 38% (Belanger & Omiecinski, 1986). While some of this increase can be attributed to a population composition shift in the 25–44 age group (26.7% in 1961 and 32.2% in 1986), other social changes, particularly increases in the participation by women in postsecondary education and the labour market provide more convincing arguments (COPS Bulletin, 1987).[2]

MODEL AND DATA

The conceptualization of the choice process leading to matriculation as a full or part-time student was developed in a previous paper and builds on Hassler's (1985) work. Hassler states:

> . . . visualize the course of selection as being very much like a funnel. At the start, each high school student considers a wide variety of postsecondary school options. These options become increasingly more specific and detailed until we move to the mouth of the funnel, when the matriculation decision is made. At the beginning or predisposition phase, a number of factors including students socioeconomic background, attitudes and attributes, the influence of significant others, high school characteristics, and academic ability are deemed to be important. The middle or search phase of the college choice model includes such factors as college communication strategies (e.g., campus visits, written information), perceived quality of postsecondary institutions and information-gathering (e.g., net cost of attending various postsecondary institutions). In the third phase or choice stage, students narrow their selection to one of several institutions. (Anisef, McAdam & Ting, 1987, p. 7)

The decision-making model employed in this analysis assumes that at least a portion of university students make a conscious choice (whether explicit or implicit) between attending university full or part-time. This choice must be relevant to a sufficiently large number of students for changes in the mix of socio-demographic and economic variables to be associated with changes in the over-all balance between full-time and part-time students.

While decision-making model(s) are insensitive to more general social changes that subsequently influence postsecondary choice, their repeated use serves to identify important changes in the effects of variables. More global or general social changes (e.g., increases in female labor force participation) can then be introduced and discussed. After identifying temporal changes in the effects of selected characteristics on registration status, more general social changes (e.g., increased female labor force participation) will be considered.

Data analysed in this paper derive from two nationwide postsecondary student surveys conducted by Statistics Canada for the Secretary of State. The 1974-75 survey was conducted in February, 1975 and the total sample consisted of 66,880 students in university and 35,925 community college students. The 1983-84 survey was conducted during February and March 1984. Of a total sample of 63,948, 54,302 usable responses were obtained, for a gross response rate of 85 percent.[3] Respondents in both survey years were stratified by province, type of institution, registration status and level of study. Within each stratum, there was proportional allocation by sex and field of study. A variety of data collection techniques were employed in both surveys. These included mail out questionnaires, telephone reminders and telephone interviews.

Both surveys experienced a number of problems with coverage of the target population, mainly under-coverage due to non-responding institutions, partial reporting, and timing. One major institution did not participate in the 1974-75 survey while 24 university-level institutions failed to respond in the 1984-84 survey.[4] Most of the 24 non-responding universities were small, the exceptions being Mount Saint-Vincent, Concordia, York, Winnipeg, and Lethbridge. Of these, Concordia and York are most important since both have enrolments in excess of 25,000 and attract large numbers of part-time students and higher than average proportions of students from less privileged backgrounds. The estimated enrolment of the non-responding universities represented 10. 3 % of total estimated university-level enrolment (Porter & Jasmin, 1987). Thus, while non-responding institutions introduce some bias, we anticipate that the general patterns revealed in this analysis would not significantly alter had students from these institutions been included in the sample.

A second, more severe limitation concerns student non-registrants and particularly part-time students in 1983-84. The sampling frame was derived from registration information in the Fall semester while data collection occurred in the Spring. A comparison of USIS information and the 1983/84 survey sample revealed that about 24% of part-time students were no longer registered when the survey was actually conducted. Since these 'missing' students are likely to differ from those registered in both terms, it is difficult for us to generalize findings to all participating students in Canada.

A third limitation pertains to the sorts of variables in the postsecondary student surveys that can be employed to empirically test Hassler's choice model. While information regarding the influence of significant others, high school characteristics and academic performance and the contact of students with postsecondary institutions was simply not gathered other important variables are available. These variables (see Appendix) include: sex and age; marital status and presence of dependent children; parent's highest level of education completed; whether respondents applied for government loans or borrowed money to finance their studies and respondent's region of study. Ample evidence for the relevance of these variables to part-time university study is provided in a number of works (Anisef, 1987; Anisef & Ting, 1985; Pike & McIntosh, 1978).

METHODS

To ascertain the effect of a characteristic on registration status while controlling for other characteristics, logistic regression models are employed (Fox, 1984). The estimated coefficients in the logistic models express the linear effects of independent variables on the logarithm of the odds-ratio, that is, the odds of registering part-time rather than full-time. It should be noted that positive coefficients indicate higher probabilities of registering part-time. Since it is difficult to conceptualize in terms of log-odds, the analysis transforms the coefficients into the change in probability resulting from a unit increment in an independent variable. This change in probability is computed by the formula:

$$\Delta p = (\exp(Li/[l + \exp(Li)] - \exp(LO)/[l + \exp(LO)]) \times 100\%$$

where *exp* denotes the exponentiation to the power of the constant *e*, and LO – Ln[p/(1 – p)], the logit of the odds-ratio at the sample mean on the dependent variable, *p*. *Ln* denotes the natural logarithm. Li = LO + Bj represents the logit after a unit increment in the independent, where Bj is the estimated coefficient (Petersen, 1985).

In order not to bias the parameter estimates or the estimates of standard errors, the logistic analyses were based on unweighted data. Table I presents the descriptive statistics of variables employing the logistic analysis by sex and year. Standard deviations are computed for the variable AGE only. All the others are zero-one dummy-coded variables and, thus, are not interpretable in terms of standard deviations.

Table 1

Means of Variables in the Logit Models of Registration status by Sex and Year (Undergraduates)

	1974-75			1983-84		
VARIABLES	Male	Female	1974–75	Male	Female	1983-84
Status[a]	.108	.178	.140	.270	.391	.336
Age[b]	22.80	23.58	23.10	25.32	27.17	26.32
	(4.31	6.53	5.46	7.26	9.02	8.31)
Married	.171	.183	.177	.224	.288	.259
Child	.077	.105	.090	.156	.237	.200
Loan	.523	.470	.498	.474	.439	.455
Borrow	.537	.460	.502	.504	.447	.473
Parents Education						
Secondary/Trades	.295	.283	.290	.315	.297	.305
Some postsecondary	.175	.206	.189	.179	.192	.186
Bachelor's degree	.126	.129	.127	.143	.138	.140
Post-graduate degree	.081	.096	.087	.109	.093	.100
Regions						
Prairies	.342	.334	.338	.281	.292	.287
Ontario	.143	.150	.146	.151	.160	.160
Quebec	.121	.121	.121	.122	.111	.116
Atlantic	.271	.287	.278	.330	.324	.327
Sex	---	---	.461	---	---	.542
N[c]	8181	6984		6008	7115	
Year	.464					

Note: All variables are unweighted

[a] Part time students are coded 1, and full-time students, 0.

[b] The standard deviations of AGE are in parentheses

[c] The sub-sample sizes include only respondents with no missing cases on the variables in the logit models.

The specification of models is based on the availability of variables in both survey years. Since one major interest concerns the temporal changes in the effects of independent variables, logistic models are fitted to the data separately for the two survey years. Since it is also important to distinguish the differential impact of independent variables separately for males and females, the logistic models are fitted for each sex within each year. These separate analyses result in four identical logistic models as shown in Tables 2 and 3.

Table 2

Estimated Coefficients and Predicted Changes in Percentage (^ %) for the Logit Models of Registration Status (Undergraduates), 1974–75.[a]

	MALES			FEMALES		
VARIABLES	Estimates	p	^%	Estimates	p	^%
Intercept	–7.925	.0001	----	–5.938	.0001	----
Age	.213	.0001	2.23	.150	.0001	2.30
Married	1.178	.0001	17.42	1.428	.0001	29.65
Child	.534	.0001	6.32	.702	.001	12.61
Loan	–.241	.097	–2.11	–.195	.18	–2.68
Borrow	–.229	.11	–2.02	–.334	.021	–4.38
Parents Education[b]	----	.014	----	----	< .001	----
Secondary/Trades	–.076	.48	–0.71	–.138	.18	–1.93
Some postsecondary	–.333	.014	–2.81	–.28	.014	–3.80
Bachelor's degree	–.346	.031	–2.91	–.605	.0001	–7.23
Post-graduate degree	–.489	.017	–3.89	–.982	.0001	–10.30
Regions[c]	----	< .001	----	----	< .001	----
Prairies	.466	.0059	5.37	.518	.0018	8.86
Ontario	.742	.0001	9.47	.426	.024	7.10
Quebec	1.053	.0001	14.96	1.126	.0001	22.24
Atlantic	.708	.0001	8.93	.631	.0002	11.13
–2 x log Likelihood (intercept)			11341.3		9681.9	
likelihood-ratio chi-square			7504.2 (14 diff)		5539.0 (14 diff)	

[a] The estimated coefficients and changes in percentage represent the likelihood that one chooses part-time as opposed to full time study.

[b] The reference category is not formal education or less than secondary education.

[c] The reference category is in the province of British Columbia.

The four models are then combined into a single model with first- and second-order interactions for sex, year and each of the other independent variables.[5] Analyses are performed employing this combined model to identify temporal changes in and sex differentials relative to the impact of other independent variables, that is, the interaction effects. Note that the principle of marginality is observed in all the non-additive models; that is, if an interaction term is present, the corresponding main effects are also included (Fox, 1984).

Table 3

Estimated Coefficients and Predicted Changes in Percentage (^ %) for the Logit Models of Registration Status (Undergraduates), 1983–84.[a]

	MALES			FEMALES		
VARIABLES	Estimates	p	^%	Estimates	p	^%
Intercept	–6.355	.0001	----	–5.790	.0001	----
Age	.212	.0001	4.38	.202	.0001	4.90
Married	.819	.0001	18.62	1.374	.0001	32.63
Child	.279	.038	5.84	.013	.91	6.81
Loan	–.471	.0005	–7.04	–.308	.0044	–7.04
Borrow	–.356	.0025	–6.42	–.589	.0001	–12.83
Parents Education[b]	----	< .001	----	----	< .001	----
Secondary/Trades	.057	.57	1.14	–.041	.66	–.97
Some postsecondary	–.191	.11	–3.60	–.127	.22	–2.98
Bachelor's degree	–.568	.0001	–9.67	–.389	.0011	–8.78
Post-graduate degree	–.313	.029	–5.71	–.783	.0001	–16.41
Regions[c]	----	.16	----	----	.033	----
Prairies	–.018	.809	–.365	–.028	.82	–.67
Ontario	.208	.16	4.29	.267	.048	6.51
Quebec	.228	.13	4.72	.248	.085	6.04
Atlantic	.017	.90	.34	.091	.46	2.19
–2 x log Likelihood (intercept)			8328.7		9863.5	
likelihood-ratio chi-square			3853.6		5315.1	

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[a] The estimated coefficients and changes in percentage represent the likelihood that one chooses part-time as opposed to full time study.

[b] The reference category is not formal education or less than secondary education.

[c] The reference category is in the province of British Columbia.

FINDINGS

Environmental and demographic characteristics

The effect of a student's region of study[6] for 1974-75 is clearly supported by the estimated coefficients shown in Table 2. Overall regional effects are statistically significant at p < .001 for both sexes. Particularly noteworthy was the far greater likelihood of male and female undergraduates from Quebec choosing part-time status than British Columbian undergraduates. By way of illustration, male Quebec undergraduates were 15% more likely and female Quebec undergraduates 22% more likely than their British Columbian peers to select part-time registration status.

The impact of a student's region of study on choice of registration status in 1983-84 is statistically significant for females (p = .033) but not for males. A comparison of estimated coefficients in Tables 2 and 3 generally indicates that a sharp reduction of influence by region on registration status for both sexes has occurred between 1974-75 and 1983-84. Age played a modest but statistically significant role for male and female undergraduates (p = .0001) in its influence on registration status. Older male students were more likely to study part-time in 1974-75. Results are virtually identical for female undergraduates.

The effect of age on registration status in 1983-84 was similar to that identified for 1974-75. Older male and female undergraduates were more likely to enrol part-time in 1983-84 (p = .0001).

Marital status, of all student characteristics in the regression model (and particularly for females), had the most powerful impact on determining registration status. This effect was statistically significant at p = .0001. Married female undergraduates were 29.6% more likely than single female undergraduates to opt for part-time registration status. Married male undergraduates were 17% more likely than single male undergraduates to enrol part-time. It can be seen that marriage, with its associated family obligations, was one factor that strongly predisposed undergraduates to study part-time in 1974-75.

The family obligations associated with being married exerted effects on male and female undergraduates in 1983-84 similar to those in 1974-75. Married males were 19% more likely and married females 33% more likely to enrol part-time in 1983-84 (p = .0001). Female undergraduates with children were 13% more likely to enrol part-time while male undergraduates with similar obligations were 6% more likely to study part-time.

The presence of dependent children also had strong effects on registration status for both male and female undergraduates (p = .001) in 1974-75. While the influence of having dependent children on registration status was similar for male undergraduates across the survey years the situation altered for female undergraduates. Male undergraduates in 1983-84 were 6% more likely to enrol part-time (p=.038). For female undergraduates the relationship is not statistically significant (p = .91). It would appear that women in the eighties do not identify having dependent children as a rationale for choosing part-time over full-time registration. Part of the explanation may relate to improvements in daycare and the increased commitment by women to participate fully in higher education. While this may be so for many women, the reader should recall that the postsecondary surveys may not adequately reflect the situation of all part-time students in Canada, given the large number of part-time undergraduates that dropped out before the surveys were conducted.

Socioeconomic Status[7]

The overall impact of parents' education on registration status was statistically significant for male (p = .014) and female (p = .001) undergraduates in 1974-75. Recall that no formal education or less than secondary education is the reference category employed in the analysis. Table 2 reveals, for male and female undergraduates alike, that the probability of enrolling full-time increases as parental educational attainment increases. By way of illustration, female undergraduates whose parents have a secondary school/trades education are 2% more likely than peers whose parents have no formal education or less than secondary to opt for full-time registration status. In contrast, female undergraduates whose parents are postgraduates are 10% more likely to enrol full-time. The pattern for male undergraduates is similar, but less marked.

The overall effect of parent's education or registration status for male and female undergraduates also proved statistically significant (p < .001) in 1983-84. Students from a more advantaged educational background (particularly if parents had a postgraduate education) were more likely to enrol full-time in undergraduate studies. For example, female undergraduates whose parents have a postgraduate education were 16% more likely to enrol full-time than counterparts whose parents had no schooling or less than secondary. When female undergraduates whose parents have a secondary/trades education is examined the probability of enrolling full-time is reduced to less than 1%.

Economic Factors

Male and female undergraduates who applied for a government loan to support their university studies were somewhat less likely to enrol part-time in 1974-75. These effects were not statistically significant.

While the effect of applying for a government loan was not statistically significant for either male or female undergraduates in 1974-75, such was not the case in 1983-84. For both sexes, an application for a loan increased the probability of enrolling full-time (p = .0005 for males and p = .0044 for females). Thus, male and female undergraduates were approximately 7% more likely to enrol on a full rather than part-time basis if they had applied for a government loan.[8]

When we turn to examining the impact of borrowing to finance university studies a similar pattern emerges. Those male and female undergraduates who borrowed were less likely to enrol part-time. While the effect of borrowing is not statistically significant for males it is for females (p = .021). Thus, female undergraduates that borrow are 4% less likely to enrol part-time.

While the effect of borrowing to finance university studies on registration status proved statistically significant only for females in 1974-75, this effect was significant for both sexes (p=.0025 for males and p=.0001 for females) in 1983-84. By way of illustration, male undergraduates who borrowed were 6% more likely while female undergraduates were 13% more likely to enrol full-time.

These findings illustrate a common sense linkage between registration status, total educational costs and the need to either borrow or apply for loans. Full-time study is more costly than part-time study and substantially increases the need to borrow. It should also be noted that success at borrowing may enable students to register full-time while failure may require students to enrol part-time.

Interactions

There was a greater probability of older women than older men enrolling part-time in 1974-75 (p = .0001) but not in 1983-84. Married women were more likely than married men to enrol on a part-time basis in both survey years though this tendency was more pronounced in 1983-84. Finally, an interaction effect between sex and parent's education (at the postgraduate level) was detected in both survey years. Female undergraduates whose parents attained a postgraduate degree proved more likely than their male counterparts to enrol part-time.

Temporal changes

This part of the analysis offers us the opportunity to identify changes in the effects of variables in the regression models for males and females separately between 1974-75 and 1983-84.

Environmental and demographic characteristics

Estimated coefficients in Table 4 clearly demonstrate that student's region of study had substantially diminished in its effect on registration status from 1974-75 to 1983-84. This applies equally to male (p = .008) and female undergraduates (p < .001). This should not be interpreted to mean that region does not count. Only that its impact relative to other variables in our regression models has weakened in influencing the choice of registration status. Female undergraduates that live permanently in Ontario form the exception to this general pattern. Although the estimated coefficient indicates a small decline in effect (relative to British Columbia) the result is not statistically significant.

While the effect of age declined slightly among males, this decline is not statistically significant. Among females the impact of age on choosing to study part-time actually increased and this increase is statistically significant (p = .00001). A separate examination of second-order interactions shows that the sex difference in impact of age is statistically significant over time while the differential impact of age for the two sexes has diminished. Why has this happened? At the university level, the female component increased dramatically from 21 % in 1955 to 48% in 1985 (National Forum, 1987). From 1970 to 1985 the number of women in Canadian universities more than doubled and the increase in enrolments during the 1970s was caused almost exclusively by the increased participation of women, particularly those over the age 24 attending as part-time students (CAUT, Forum Notes, 1987). While part-time studies offer new opportunities for all Canadians this is increasingly perceived by women over 30 as an important strategy for reshaping their life course.

Among undergraduate males, marriage *decreased* in its effect on enrolling part-time from 1974-75 to 1983-84. This finding is statistically significant (p = .023). Among females, the decline in the effect of marriage was far more modest and not statistically significant (p = .69). For all undergraduates but particularly for males higher education in the 1980s is perceived in ten-ns of its relation to career preparation and upgrading. This constitutes a shift in emphasis compared with the seventies. Married men increasingly recognize the need to upgrade their skill levels and credentials if they are to gain promotion or simply maintain job security. Given these developments over the last decade or so, marriage *per se* among men has had diminishing importance to influencing the choice of part-time registration status. While these same developments have influenced women,

Table 4

Estimated coefficients of first-order interactions in logit models of registration status by sex (undergraduates)

	Males		Females	
VARIABLES	Estimates	p	Estimates	p
Age X Year	-.001	.94	.052	.0001
Married X Year	-.360	.023	-.053	.69
Child X Year	-.255	.18	-.688	.0001
Loan X Year	-.176	.35	-.112	.53
Borrow X Year	-.127	.50	-.254	.16
Parent's education X Year	-----	.44	-----	.75
Secondary/Trades	.133	.36	.097	.48
Some postsecondary	.142	.43	.158	.31
Bachelor's degree	-.222	.29	.215	.27
Post-graduate degree	.176	.48	.199	.41
Regions X Year	-----	.0081	-----	<.001
Prairies	-.485	.024	.546	.007E
Ontario	-.533	.025	-.160	.49
Quebec	-.825	.0005	-.878	.0001
Atlantic	.691	.0017	-.540	.010

traditional role relationships between men and women have altered, albeit slowly. That changes are taking place is supported by the significant decline in effect on part-time registration status among women of having dependent children (p=.0001). The decline among males was more modest and not statistically significant. While these temporal changes are positive they should not be cause for celebration. As mentioned earlier in this section, many part-time students dropped out before either the 1974-75 or 1983-84 surveys were conducted. More importantly, we know very little about those women (and men) who decided against enrolling either part- or full-time due to parental obligations and responsibilities.

Socioeconomic status

In all cases except among males whose parents had a bachelor's level of education, there was no increased effect of parents' education on part-time registration status from 1974-75 to 1983-84. These effects are neither statistically significant for males (p = .44) nor females (p = .75).

Economic factors

These effects of either obtaining a government loan or borrowing to finance their university declined in importance for male and female undergraduates. However, such declines were not statistically significant.

CONCLUSIONS AND IMPLICATIONS

The analysis of temporal changes in enrolling part-time among undergraduate students provide a number of significant insights that can be related to the choice model presented earlier in this paper. While the decision to register on a full or part-time basis is significantly influenced by regional, demographic, socioeconomic and economic factors, dynamic social change (e.g., inflation, recession, demographic) can, in a relatively short period of time, influence the decision-making process that results in postsecondary choices. Thus, while regional forces played a substantial role in choosing part-time registration status in 1983-84 their impact was more muted in comparison to 1974-75.

Given the provincial range in studying part-time across Canada in 1983-84 (from 22% in Nova Scotia to 52% in Quebec), uncovering the dimensions that make region a potent factor remains a critical problem for social scientists. As Belanger and Pedersen (1973) argue, national studies should systematically consider important regional differences. Neglecting such differences may be misleading.

A particularly significant temporal change concerns the dramatic increase of women in part-time enrolment — over 300% between 1965 and 1985. The corresponding increase for men was 158% (Belanger & Omiecinski, 1987). This means that women have become an even more dominant group in part-time studies, making up about 59% of enrolments.

This part-time enrolment surge is indicative of even more fundamental changes with respect to the status of women and sex roles over the past 40–50 years. In considering the postsecondary system as a whole, the proportion of female students shifted from 36% in 1955 to 49% in 1985. At the university level the shift was more dramatic, from 22% in 1955 to 48% in 1985 (National Forum, 1987). However, to place this change in perspective the majority of Canadian women and men (71% and 68% respectively in 1985) have no more than a high school education. Furthermore, about twice as many men as women possess trade certificates and diplomas (Canadian Congress for Learning Opportunities for Women, 1986).

Equally dramatic has been the increased participation by women, 15–64, in the Canadian labor force, from 21 % in 1941 to 55% in 1985. In the past decade or so, the labor force participation of women with young children (3 years of age or younger) has grown most significantly, from 31% in 1976 to 56% in 1985 (Canadian Congress for Learning Opportunities for Women, 1986). Oppenheimer (in Romaniuc, 1987) sees this as reflecting an "economic squeeze" where a larger number of babyboomers entered a labor force in a time of economic slowdown and rising inflation. While modeling their aspirations for high standards of living on those of their parents, rising inflation and unemployment meant that consumption aspirations outstripped the economic resources for achieving them — usually the husband's income. Rather than suffer from relative economic deprivation, women in the U.S. (and I would suggest women in Canada) have entered the labor force in ever increasing numbers.

Increases in postsecondary and labour force participation by women parallel a more fundamental shift from a traditional division of sex roles toward a greater integration of women into the economic system. Romaniuc (1987) cites Thornton and Freedman who found that "American women had made a tremendous shift toward more egalitarian sex roles between 1962 and 1977" (pp. 65-66). Changes in general principles have been occurring with substantial increases in a nontraditional orientation among women. Accompanying these global changes is a decline in fertility rates, with fewer people marrying (or those that marry, marrying later in life) and many more divorcing (Romaniuc, 1987). Thus, the number of married part-time undergraduates declined from 61.2% in 1974-75 to 56.9% in 1983-84. The proportion either separated or divorced increased from 5.9% to 8.5%. While it makes sense that an increasing number of divorced or separated persons are viewing a university education as a strategy for adapting to changed circumstances, reshaping lives and forging new career directions, information to test this hypothesis is not available in the postsecondary student surveys.

I suggest also that the data provide indirect evidence for a role incompatibility or conflict theory, particularly with regard to working mothers who enrol as part-time university students. While general changes in sex roles and attitudes have clearly occurred, most housework chores and child-rearing responsibilities are assumed by working wives (Romaniuc, 1987).

Adult learners (and particularly women) often encounter indifference to their problems on Canadian campuses (Campbell, 1984). A study of mature students at Atkinson College in Ontario led the authors to conclude that:

> . . . our analysis points to fundamental gender differences in the transition to university. Such differences should be addressed by universities concerned with amelioration or easing the problems encountered by part-time adult learners who must frequently juggle personal, work and family responsibilities. (Anisef & Ting, 1985, p. 183).

As I indicated earlier, the comparison of the 1983-84 survey sample and USIS information shows that a significant minority of part-time students (about 24%) were no longer registered when the survey was conducted. It is likely that students that persisted, did so in part because they were able to resolve their 'role incompatibility' problems. Without being able to trace the university careers of part-time students from the time they first register in programs, the role incompatibility hypothesis must remain at the level of plausible speculation. Lome Tepperinan and Charles Jones (1988) suggest the unfolding of a trend whereby, between the present and 2025, the adult female life cycle will become increasingly individualized. This individualization refers to an increase in the number of statuses, an increased movement among statuses over time and an increasing variation in the predictors of status among women. If this is so, then the negative consequences of role incompatibility may be part of this unfolding. As women adjust, the stress resulting from role incompatibility should diminish. Should universities recognize that future clientele, in the face of a diminishing 18–24 age cohort, will consist of older, part-time students, they may respond by becoming more accommodating and institutionally less rigid. This too, should help reduce the stress associated with role incompatibility.

Both postsecondary surveys show that greater proportions of part-time students are drawn from disadvantaged backgrounds than are full-time students. And yet over half of all part-time students in 1983-84 already held postsecondary qualifications. About 28% had completed no more than a secondary level education. These observations suggest that the 'second-chance' hypothesis applies to only a minority of part-time students. (Porter, 1986). For the majority, part-time study is a reaction to a changing technological society and the resulting need for lifelong learning skills upgrading. But what are the outcomes (e.g., for the labor market) of part-time study? While teachers constituted the major clientele for part-time studies in the early 1970s, this clientele has since declined. In 1983-84 only 8.7% of male and 12.8% of female part-time undergraduates selected Education as their major field of study. The comparable figures for 1974-75 were 12.8% for male and 27.1 % for females. Bertrand (1985) in her review of accessibility research in Quebec (the province having the largest proportion of part-time students) indicates strong concern by educators that a limited range of short, less prestigious programs of study are available to part-time students. These programs lead not to degrees but certificates. Furthermore, there is a particularly high incidence of part-time study among Francophones and women. Without additional educational and occupational outcome data it is difficult to evaluate the more favorable 'second chance' or democratization perspective in contrast with the more critical or cynical perspective suggested by Bertrand.

Given the greying of the Canadian population (by the year 2030 there should be twice as many Canadians over age 65), the focus on personal growth, the individual and life-long learning, the expansion and need for adult education programs seems assured. While part-time university students constitute a relatively new clientele in Canadian higher education their number and diversity will likely grow. And so will our need to acquire more detailed information regarding the experiences of various sub-groups of part-time university students.

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Appendix

2. Variables employed in this analysis

Age	Age of respondents in years. Since the 1974-75 data on age are grouped in 5 year intervals, the mid-points are used.
Married	Married respondents are coded as 1 and all others as 0.
Child	Respondents are coded 1 for those who had dependent children and 0 for those who had no dependent children.
Loan	Those who had applied for government loans are assigned the value of 1 and those who had not, 0.
Borrow	Respondents are coded 1 if they had borrowed money to finance their university education and 0 if otherwise.
Regions	Recoded from the respondents' region of study, the five regions are: British Columbia, the Prairie provinces, Ontario, Quebec, and the Atlantic provinces. These regions are coded into four dummy variables, with British Columbia assigned as the reference category.
Parent's Education	Parent's (or guardian's) education is defined as the highest level of education completed by the more academically qualified parent. It is coded into five levels and represented by four dummy variables. The five levels are: (1) less than secondary school, (2) completed secondary or trades school, (3) some postsecondary college or university, and nursing or teachers college,

	(4) Bachelor's degree, and (5) postgraduate degree — Master's, Ph.D., or degree in law, medicine or dentistry. The "less than secondary school' level is employed as the reference category.
Sex	The values of 1 and 0 are assigned to females and males, respectively.
Year	
Registration Status	Part-time respondents are coded 1, and full-time respondents, 0.

Notes

[1] At York University, for example, students are described not in terms of their year of study but in terms of course credits.

[2] Two-thirds of part-time university students were between the ages of 25–44 in both 1975 and 1985.

[3] While the national postsecondary surveys contain information on part-time graduate students, only data pertaining to undergraduates are analysed in this paper. Of the total part-time university student population, more than 77% in 1974-75 and 86% in 1983-84 were at the undergraduate level.

[4] Weighted figures do not account for institutions not participating in the two surveys.

[5] An interaction effect occurs when two or more variables work together to produce a phenomenon (e.g. registration status). Interaction is present when the effect of one independent variable on the dependent variable actually depends on the attributes of one or more other independent variables.

[6] About 93% of students studying in a region also count that region as their permanent place of residence. While the data demonstrates the strong influence of "region," the factor(s) associated with region (e.g., unemployment rate, relationship of universities and colleges) are not incorporated into the analysis of registration status.

[7] One would anticipate that the economic status of student's parents would prove an important factor in determining registration status. Income and occupational information pertaining to parents were not requested when students' age equalled or exceeded 30. Since a large percentage of part-time university students are 30 years of age or older this precluded the use of income and occupation in this analysis.

[8] Causation, in this instance, may run in the opposite direction. Once students decide to enrol they may then seek a government loan. Much more is required for full-time than part-time attendance. Also, it has been traditionally easier to secure government loans as a full-time rather than as a part-time student.

Grade Inflation and University Admissions in Ontario: Separating Fact from Perception

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ABSTRACT

It is widely believed that high schools across Ontario have inflated grades in an attempt to help students secure admission to one of the province's universities. Universities, in turn, have raised their entrance requirements to allocate available spaces among an expanding pool of applicants. The intensified competition for higher marks has put considerable pressure on students and teachers, leading to the emergence of a number of grade-enhancing practices which potentially distort the admission process at postsecondary institutions. This paper analyzes university admission data for 1983-1993 and concludes that (a) there has been only a moderate increase in entering marks across the system, (b) it is necessary to distinguish inflationary mark changes from changes reflecting demographic and budgetary factors such as the increase in the pool of applicants and in the available spaces, and (c) different trends in entering marks for various programs are largely the result of demographic factors. It is also shown that while increases in entering marks across the university system have been modest, entering marks at individual institutions have risen more sharply, a paradox explained by the redistribution of the first-year registrants among universities.

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RÉSUMÉ

On pense communément que les écoles secondaires de l'Ontario ont gonflé les notes des élèves en vue d'aider ces derniers à se faire admettre aux universités de la province. À leur tour, ces universités ont établi des critères d'admission plus exigents afin de mieux répartir les places prévues parmi une base de candidats qui continue à s'agrandir. Les élèves et les enseignants ont donc subi l'influence de pressions considérables en raison d'une concurrence accrue dont le but est d'obtenir de meilleures notes. Ceci a mené à l'apparition de plusieurs pratiques destinées à gonfler les notes, ce qui pourrait éventuellement déformer la procédure d'admission dans les établissements post-secondaires. Les auteur examinent des données sur les admissions universitaires entre 1983 et 1993 et ils en arrivent aux conclusions suivantes: a) il n'y a eu qu'une augmentation modérée en ce qui concerne les notes d'admission dans l'ensemble des établissements post-secondaire; b) il faut faire la distinction entre les modifications qui découlent du «gonflement» des notes et celles qui correspondent aux facteurs démographiques et budgétaires, tel que l'accroissement de l'effectif étudiant et des places offertes; c) ce sont principalement des facteurs démographiques qui expliquent les diverses tendances concernant les notes d'admission aux différents programmes d'études. Les auteurs indiquent également que, même si les notes d'admission n'ont augmenté que légèrement dans l'ensemble du système universitaire, elles reflètent une augmentation plus importante dans certains établissements particuliers; ce paradoxe peut s'expliquer du fait de la répartition parmi les universités des étudiants inscrits en première année.

Students graduating from secondary schools in Ontario are admitted to the province's universities on the basis of their average mark in six Ontario Academic Courses (OACs).[1] In recent years, university and school officials across the province have expressed increasing interest in and concern about a number of practices among high school students whose major purpose appears to be to raise their OAC marks and thereby boost their chances of admission at one of Ontario's sixteen universities. These practices include:[2]

(1) **subject grazing** (completing more than the six OACs required for university admission);

(2) **school grazing** (completing some OACs in summer, night or correspondence schools, where academic standards are perceived to be more relaxed);

(3) **repeating** (failed or successfully completed OACs);[3]

(4) **sampling** (dropping a course when it appears that a low mark will be achieved);

(5) **slowtracking** (taking less than a full course load);

(6) **slumping** (earning a high interim mark and subsequently exerting less effort, since university admission decisions are based on interim, not final, marks in courses taken at the time applications are submitted);[4]

(7) **upgrading** (returning to school after graduation to repeat one or more OACs or take additional ones).[5]

There are also many combinations and permutations of these practices. For example, a student may complete an OAC subject in a year and then repeat it the following year to earn a high interim mark. Even if the student were to fail or to drop the repeated course, only the mark earned in the first attempt would appear in the student's final record. Some students enrol in a full-year school in the fall, drop one or more courses in January and then re-enrol in the same courses in a semestered school in the Spring term to earn a high interim mark upon repeating the first part of the course. Students may also enrol in an OAC subject simultaneously in a day school and a night school, dropping either one at some point, or they may complete a course in a regular day school and then repeat it in night or summer school.

The major factor cited as an explanation for these practices is an alleged inflation of high school marks that has compelled universities to raise their admission standards in order to ration the existing spaces among applicants, thereby further inflaming the competition for higher marks. Rumours abound that a certain faculty or university has dramatically raised its minimum cutoff point, with university officials themselves lending credibility to such rumours. For example, B.G. Granger (1994), Wilfrid Laurier University's Manager of Admissions, recently referred to "upward-spiralling admission averages."[6]

Trying to assign blame in these circumstances would be as useful as determining whether the chicken came before the egg. The strategic behaviour revealed by these grade-enhancing practices raises a number of issues around the efficiency and equity of the current university admission system, as well as having significant pedagogical and budgetary implications for Ontario high schools (Casas, 1994). However, the incidence and impact of these practices need to be documented and analyzed before possible remedies can be discussed. For example, there have been calls for the use of a standardized test such as the Scholastic Aptitude Test (SAT) as part of the university admission process on the grounds that high school marks are no longer good predictors of performance at the postsecondary level. Such calls overlook the lack of evidence that the use of standardized tests might improve the selection process; indeed, the empirical evidence points to the fact that these tests are a poorer performance predictor than high school marks,[7] in addition to the cost of these tests, the high probability of cultural, racial and gender biases inherent in such tests and the potential for distorting the school curriculum as testing begins to drive instruction.[8]

It has also been suggested that universities should be provided with more information about applicants' high school records, although there are no data as yet showing to what extent practices such as repeating or grazing inflate the average high school mark of university applicants and to what extent such practices have a differential effect on students' average marks as opposed to raising most applicants' marks equi-proportionately. A case can be made that it would be unfair to deny a student the opportunity to repeat an OAC subject or to discount the performance achieved in a repeated subject, although it remains to be established whether these opportunities to improve one's marks are available to all students on an equitable basis.[9] These and many other issues need to be fully aired before school, university or Ministry officials can begin generating solutions for problems whose very nature and impact are, by and large, poorly understood.

The objective of this paper is to initiate a discussion of these issues by examining the validity of what has become accepted as conventional wisdom, namely, that there has indeed occurred a significant escalation in the average marks needed to be admitted to Ontario's universities. For if this "fact" has little substance, high school students would have been relying on inaccurate information in making their choices of OAC subjects.[10] By increasing the pressure on these students to raise their marks, rumours of grade hyper-inflation may be contributing to the spread of the grade-enhancing practices described earlier. This study of grade inflation is situated in the broader framework of an empirical investigation of these grade-enhancing practices and our ultimate objective is to research how such practices affect the selection of applicants by postsecondary institutions and what problems they raise for our school system. To the extent that some inflation has occurred, it is necessary to search for its sources as well as to explore whether its impact is widespread or whether it affects various segments of the student population in a differential manner.

It is our contention that excessive attention had been focused on the lowest average OAC (or *cutoff*) mark for students admitted to particular university programs at various Ontario universities. It is highly unusual in describing any distribution to single out its lowest value while ignoring more conventional measures of location and dispersion. This kind of information has little value as an index of how difficult it is to gain admission into a program since all but a handful of admitted applicants have higher averages. For example, it is possible to construct a hypothetical scenario in which a university receives applications from six candidates whose average marks are 90, 85, 80, 75, 70 and 65. If that university admits five students, the cutoff mark would be 70%. In the following year, another six students may apply, with averages of 90, 85, 80, 75, 74 and 65, forcing the university to raise its cutoff mark by a dramatic 4 percentage points, even though the median mark for admitted students is unchanged (at 80) and the mean entering mark rises moderately from 80.0 to 80.8. Even if such an occurrence is somewhat implausible, concentrating on the lowest mark for a group of students admitted to a program is a poor measure of how difficult it is to secure admission to that program.

We also intend to demonstrate that higher university entrance standards do not necessarily result from grade inflation at the high school level but that the explanation may lie elsewhere. There is a lack of understanding of how the university admission process operates and, in particular, how changes in the size of the student pool may interact with changing average high school marks and changing intake levels by universities to determine the widely quoted criterion of minimum admission marks. This paper provides a theoretical framework to separate demographic and economic factors which affect admission standards from other factors, including grade inflation at the secondary school level. Wegman (1987) has noted that grade inflation calls into question academic standards and potentially reduces the value of degrees conferred, while Bromley, Crow and Gibson (1978) have pointed out that changing grade distributions can significantly impair the reinforcement/motivation and the selectivity functions of grades. It is therefore important to establish the magnitude of this problem and its causes.

The subject of grade inflation at the secondary school level and its potential repercussions on postsecondary institutions has received relatively little attention. Queen's University sociologists King and Peirt (1994) recently studied marks awarded Ontario's high school students in 1990-91, in addition to surveying students, teachers and parents at a few schools. While much useful information emerges from their study in terms of patterns of marks across different grade levels, subjects and genders,[11] the data base employed in the study was not adequate for an analysis of marks over time or to document grade-enhancing practices. In the United States, discussion of grade inflation has tended to revolve around marks at the university level, particularly in the 1970s, with much concern expressed for the resulting devaluation of degrees.[12] Much controversy has also surrounded the significance of standardized test scores and of changes in these scores over time (Bracey, 1991).

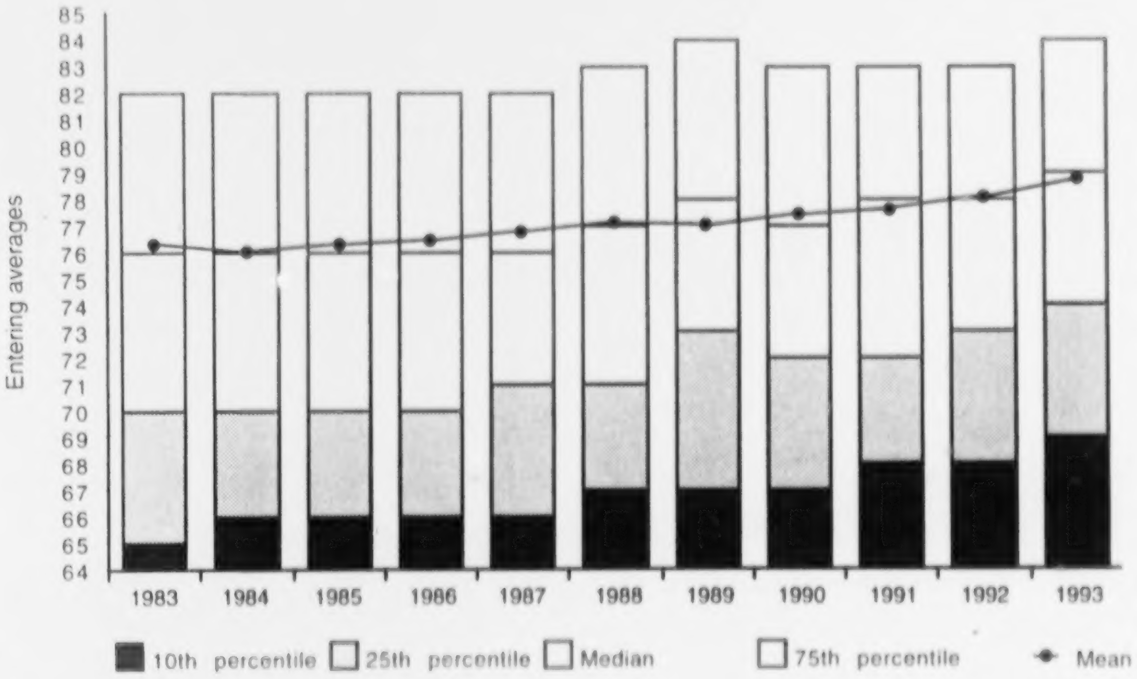
UNIVERSITY ENTERING AVERAGES: THE MACRO PICTURE

Figure 1A shows the distribution of entering averages for secondary school registrants from 1983 to 1993. These are first-year university students who were registered as full-time day students at an Ontario secondary school in their pre-university year. Excluded are those registrants who, at the time of application, had fewer than six OACs (including subjects currently taken for which interim marks are used) and who took summer courses, sending their marks directly to the universities in August. Also excluded are the so-called *regular* students, comprising students enrolled in a preliminary year program at an Ontario university, those who completed high school in a prior year or who graduated from a correspondence, night, out-of-province or out-of-country school, and those who transferred from a College of Applied Arts and Technology, a Quebec Collège d'Enseignement Général et Professionnel (CGEP), or an out-of-province or foreign college or university.[13]

Entering marks have changed moderately over this period with the largest increases occurring in the lower percentiles, not unlike the hypothetical example described earlier. Since there are usually a few students with low averages admitted on special grounds, it is reasonable to disregard the relatively small bottom group of registrants and use the tenth percentile as the effective cutoff.[14] In 1983, 90% of all registered applicants had an entering average of 65 or better; by 1993, this had risen to 69. Earnshaw (1994) noted that this grade inflation occurred across all percentiles; however, it was less pronounced at the upper end of the distribution of entering averages: the 75th percentile only rose by 2 (from 82 to 84) and has not increased since 1989. In other words, there was a compression of the distribution of entering averages, with the tail end of that distribution being eroded at

Figure 1A

Distribution of Entering Averages of Secondary School Registrants, 1983-1993.



Source: Council of Ontario Universities, Entering Averages of Registered Applicants (various years).

a faster rate than the rise in the central value. The median entering average rose by 3 (from 76 to 79), while the mean rose by a more modest 2.6 (from 76.2 to 78.8) with a concomitant reduction in the dispersion of marks as the interquartile range shrank from 12 to 10. Figure 1B shows the frequency distribution of entering averages in three selected years during this period. The unexpectedly large proportion of registrants with an entering average of 80% reflects the widespread practice of adjusting marks for students whose average is close to that standard in order that they may qualify for the designation as Ontario Scholars. While conferring this title no longer carries a monetary prize, it retains a traditional value among high school students.

Comparing cutoff or median entering averages for successive cohorts of first-year university registrants, however, is not an adequate basis for estimating the extent of grade inflation, for such a comparison fails to isolate the impact of three distinct factors which affect these indices: (a) the size of the pool of applicants, (b) the average marks of these applicants and (c) the number of admitted students. While increases in the first two tend to raise the cutoff and median entering marks, changes in the third one have the opposite effect. In an attempt to isolate these various factors, Figure 1C shows the cumulative distribution of entering marks in 1983 and 1993. Each curve displays the number of first year registrants who had at least the entering average indicated on the horizontal axis. Figure 1C also includes an "adjusted" 1983 curve showing what the cumulative distribution of entering marks in 1983 would have been if the pool of applicants that year had the same distribution of marks as the 1993 pool.[15]

Examination of Figure 1C reveals that:

[a] If the number of applicants and the number of university spaces had remained constant between 1983 and 1993, the median entering average mark would have risen from 76 to 80 (M_{1983} to M_a in Figure 1C). We can therefore state that across all subjects high school marks rose by 4 percentage points, not 3 points as a comparison between the median entering marks in 1983 and 1993 would suggest. Under the same circumstances the cutoff mark would have risen by 6 percentage points, from 65 to 71 (C_{1983} to C_a in Figure 1C).

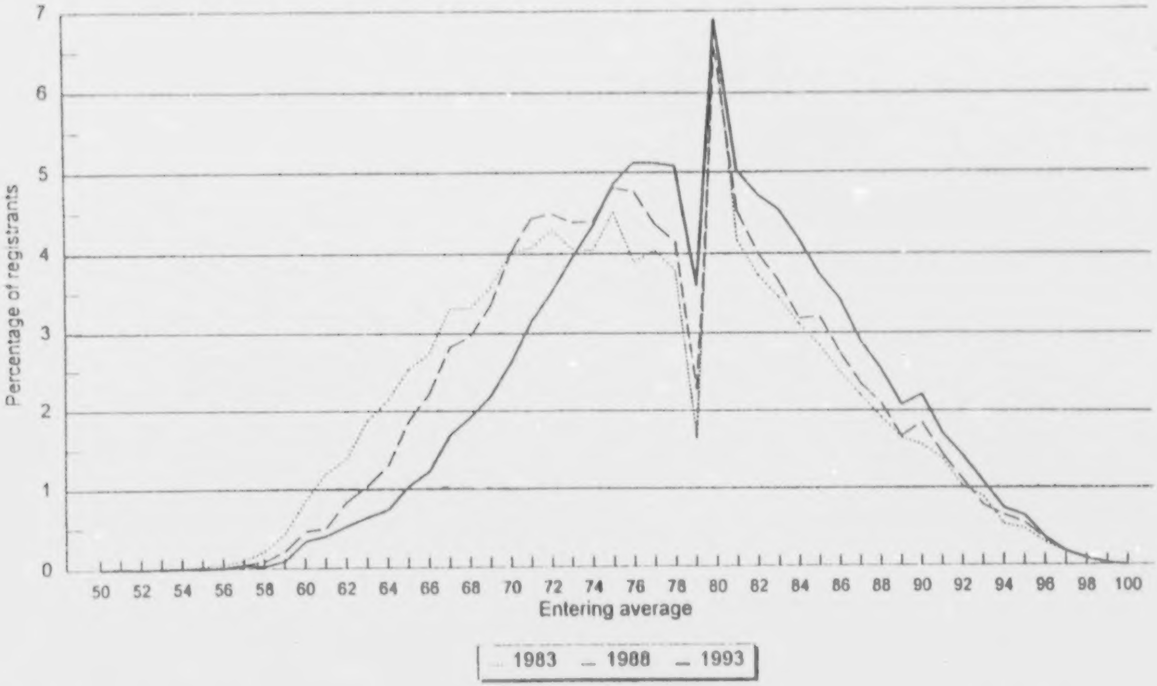
[b] The increase in the number of applicants from 47,902 to 59,275 inflated the median entering mark by an additional 1 percentage point from 80 to 81 (M_a to M_b in Figure 1C) and the cutoff mark by another 4 points from 71 to 75 (C_a to C_b).

[c] Finally, the rise in the number of spaces for first-year students reduced the median entering mark by 2 percentage points from 81 to 79 (M_b to M_{1993} in Figure 1C) and the cutoff mark by 6 points from 75 to 69 (C_b to C_{1993}).

These results are summarized in Table 1.

Figure 1B

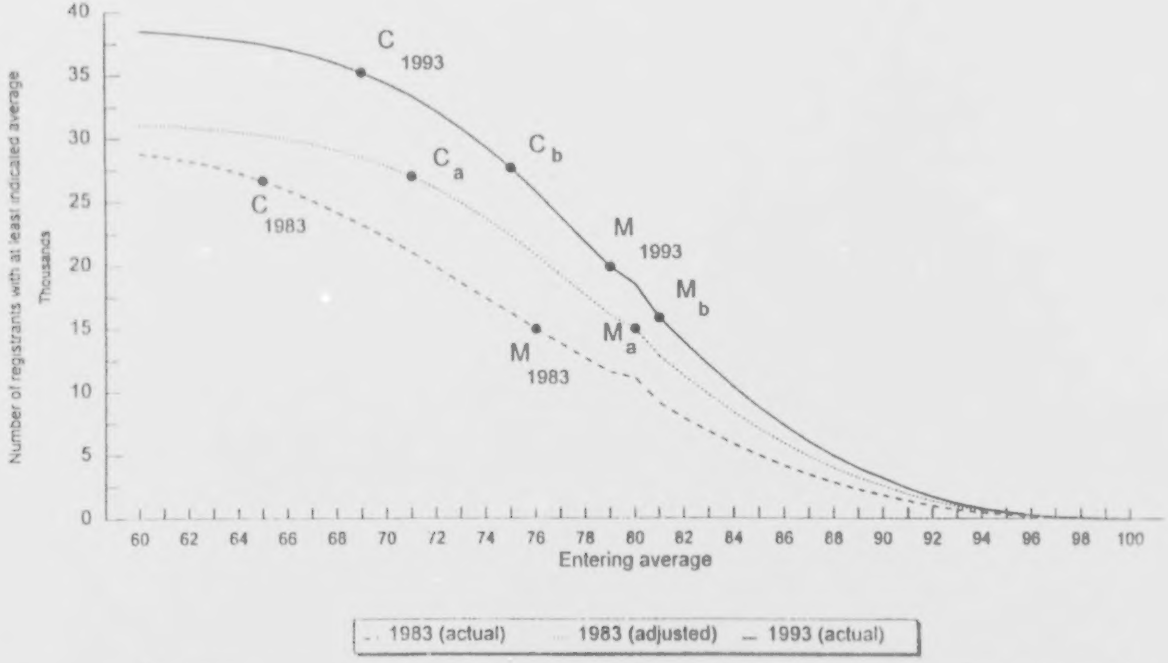
Frequency Distribution of Entering Averages, 1983-1993



Source: Council of Ontario Universities, Entering Averages of Registered Applicants (various years)

Figure 1C

Cumulative Frequency Distribution of Entering Averages, 1983 and 1993



C = cutoff, M = median

The 1983 (adjusted) curve shows the hypothetical distribution of entering marks if the 1983 registrants had the same marks as the 1993 registrants

Table 1
Summary of Results

Change in:	Due to grade inflation	Due to larger pool of applicants	Due to larger university intake	Net change
Cutoff entering mark	+6	+4	-6	+4
Median entering mark	+4	+1	-2	+3

ENTERING AVERAGES BY PROGRAM AND BY UNIVERSITY

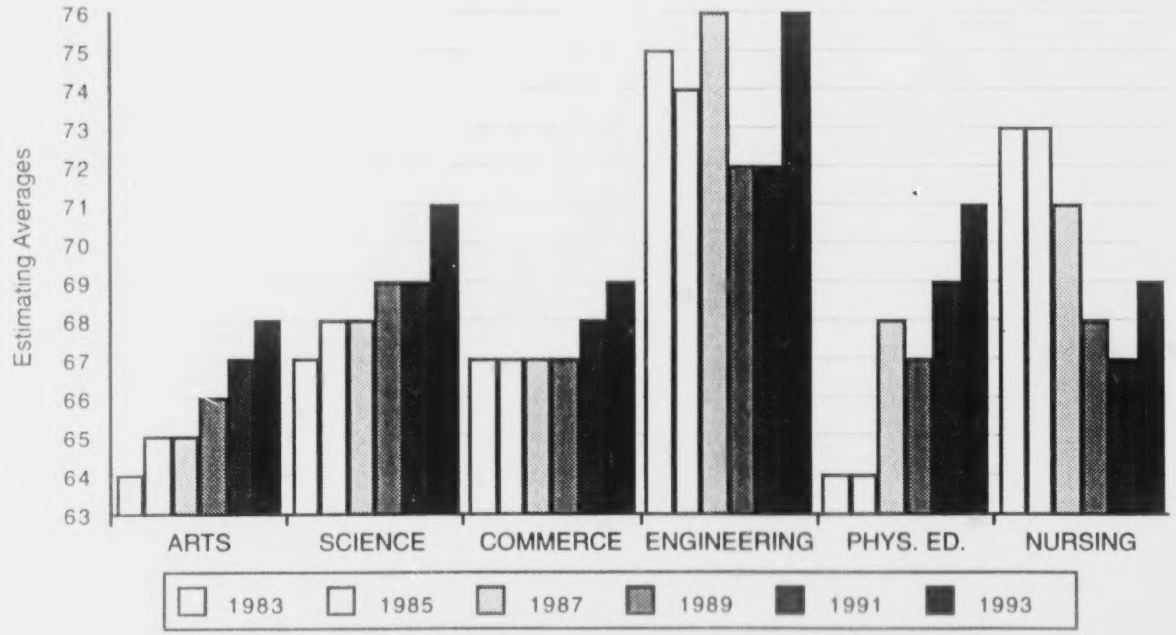
The rise in entering averages was not evenly distributed among all programs. Figures 2A and 2B show the cutoff (tenth percentile) and median entering averages for the six largest programs which together account for nearly 90 percent of all secondary school registrants. The most dramatic inflation occurred in physical education with the median entering average rising from 71 in 1983 to 78 in 1993 and with an equally large increase in the 10th percentile (from 64 to 71). This occurred despite the higher-than-average expansion in the number of secondary school registrants in this program, 39.7% compared with 32.9% for all programs combined. However, it should be noted that the number of applications for this program also expanded much faster (46.4%) than the number of applicants (23.7%) and applications (27.8%) across all programs.[16] Clearly, this was a case of expansion in demand outstripping the growth in supply, resulting in an increase in the "price" of admission.

Perhaps more surprising is the fact that the median entering average in engineering - while higher than in the other five major programs — remained unchanged during the period covered by the data. Just as (or perhaps more) surprising is the fact that the 10th percentile declined from 75 to 73. Some of this may be linked to the inclusion after 1989 of Ryerson Polytechnic Institute (elevated to university status in 1993) with a relatively large engineering program (seventh among the 12 such programs in the province in terms of enrolment). However, it is also the case that admissions into engineering expanded by 30.4% whereas applications only rose by 4.3%. A similar explanation applies to the decline in the cutoff and median entering marks in nursing with admissions rising by 22.4% while applications declined by 40.5%. Of the remaining three major programs, commerce was the most stable in terms of entering averages, although in each case registrations rose more than applications: 43.9% vs. 32.4% in arts, 13.4% vs 4.6% in science and 42.6% vs. 16.8% in commerce.[17]

In order to isolate the impact of changes in the number of applications and in the number of admissions on the median entering mark, we ran an Ordinary Least Squares

Figure 2A

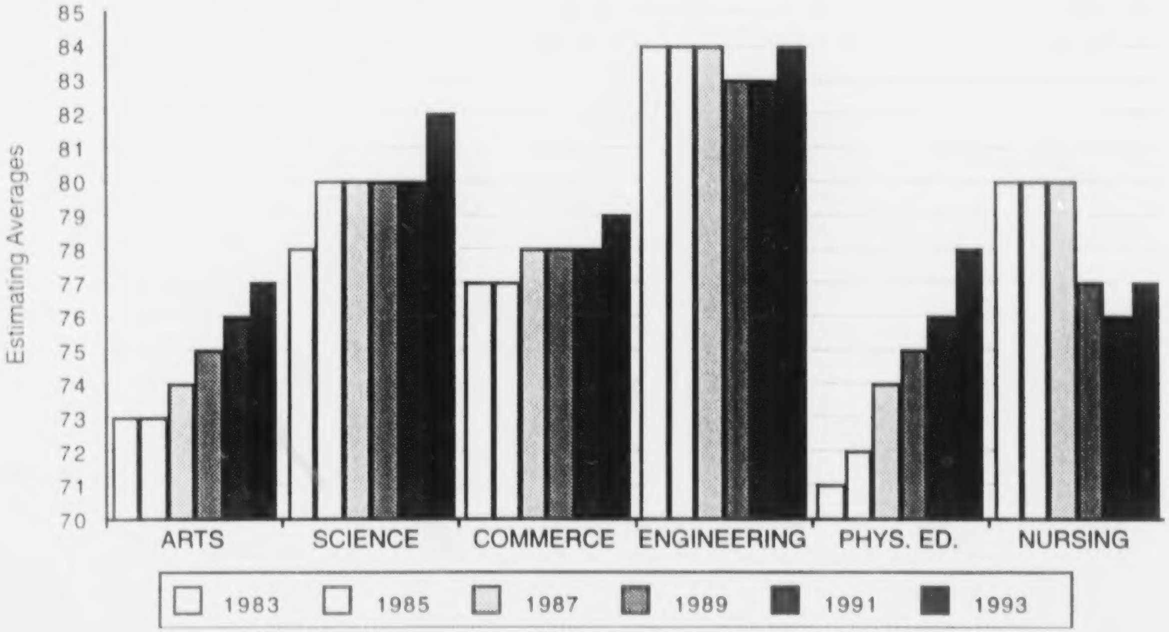
Cutoff Entering Averages in Major Programs, 1983-1993.



Source: Council of Ontario Universities, Entering Grade 13 Averages (various years)

Figure 2B

Median Entering Averages in Major Programs, 1983-1993.



Source: Council of Ontario Universities, Entering Grade 13 Averages (various years)

regression which yielded the following equation (with *t*-values in parentheses) for the 1984-1993 interval:

$$PCM = \underset{(87.464)}{0.064} + \underset{(4.487)}{0.155}\,(PCA - PCR), \quad R^2 = 0.834$$

where:

PCM is the percentage change in the median entering mark,

PCA is the percentage change in the number of applications,

PCR is the percentage change in the number of first year registrants and

R^2 is the coefficient of determination (equal to the square of the correlation coefficient), which measures the proportion of the variance of the dependent variable that is explained by the independent variable.

This equation shows that 83 percent of the changes in median entering marks for the various programs are explained by changes in the number of applicants to these programs and in the number of available spaces in each program. In particular, the coefficient of the independent variable implies that the median entering average in a program increases by 1 when the number of applications to that program grows by 6.5% more than the number of available spaces for first-year students.[18]

The residual change in entering marks is explained by other factors, including changes in the marks of applicants. For example, registrations in both the commerce and engineering programs rose by approximately 26% more than applications to those programs during the period under consideration. *Ceteris paribus,* this should have lowered the median entering average by an estimated 4 points from 1984 to 1993. Since the actual median average in the commerce program increased by 2 (from 77 to 79), we can infer that applicants' grades were inflated by 6 points. In contrast, grades for applicants to the engineering program rose by 4, exactly offsetting the decline in the median entering average resulting from the more rapid growth in registrations than in applications. The differential rates of grade inflation across programs can, in turn, be linked to different program admission prerequisites.[19]

A similar OLS regression shows that the cutoff entering mark would rise by 1 when the growth in applications exceeds that in available spaces by 5.5%:

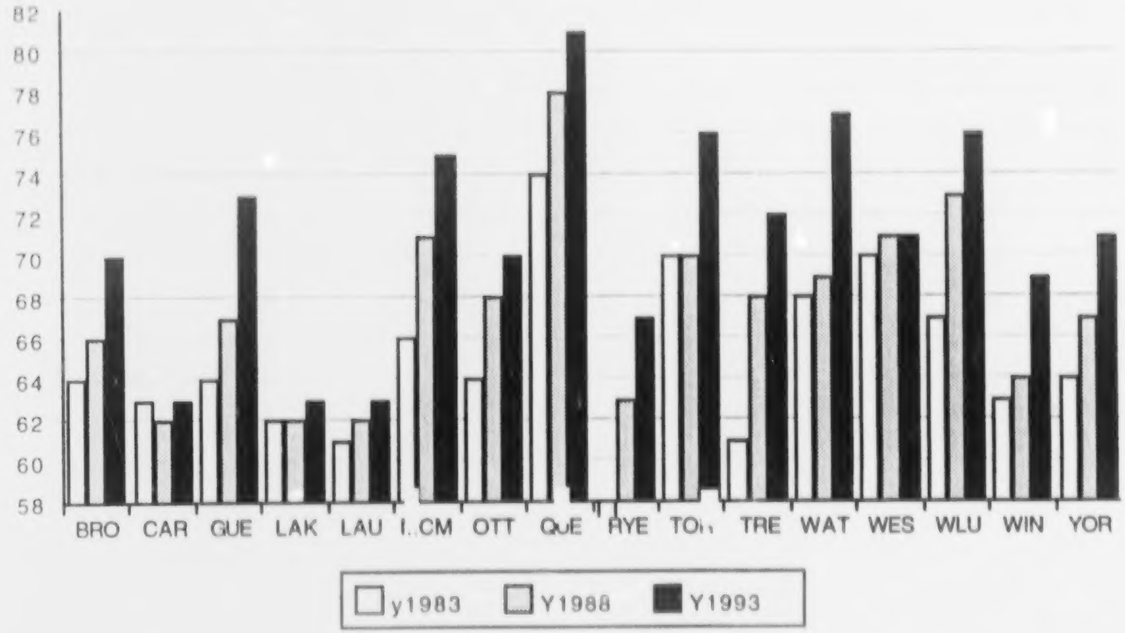
$$PCC = \underset{(55.604)}{0.074} + \underset{(3.306)}{0.181}\,(PCA - PCR), \quad R^2 = 0.7323$$

where PCC is the percentage change in the cutoff entering mark.

Figures 3A and 3B present similar data for each university. The picture here stands in sharp contrast to our earlier results: the cutoff entering average mark was unchanged at one university and rose in the remaining 14 institutions by a weighted average of 6.1 points, although the system-wide increase was only 4.[20] Similarly, the weighted average change in the mean entering marks was 3.7 while the system-wide increase was only 2.6.

Figure 3A

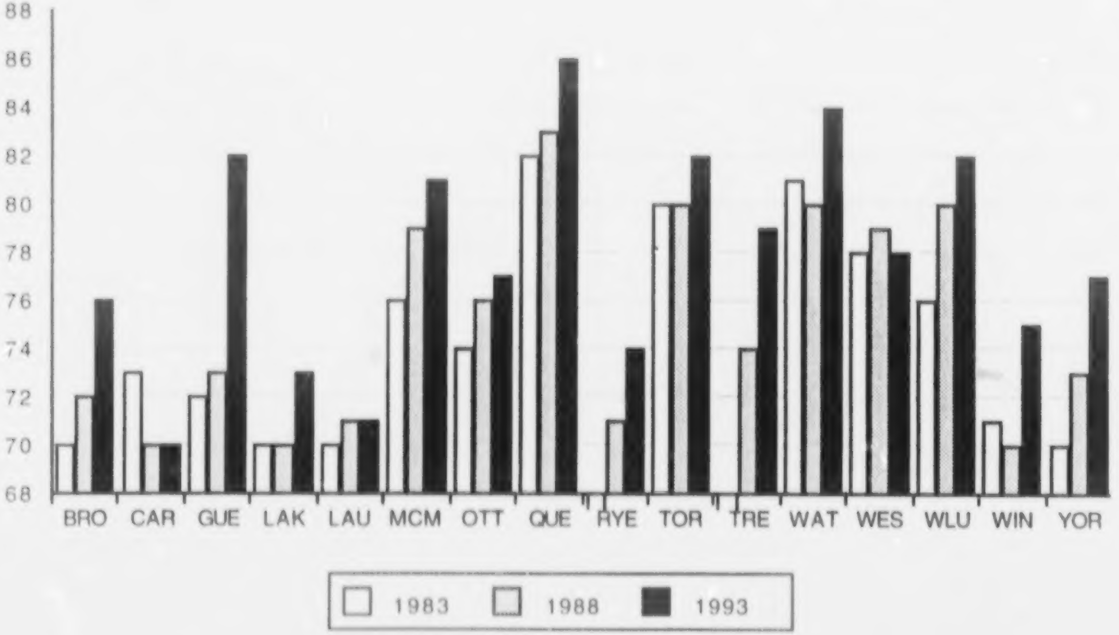
Cutoff Entering Averages by University, 1983-1993.



Source: Council of Ontario Universities, Entering Grade 13 Averages (various years)

Figure 3B

Median Entering Average by University, 1983-1993.



Source: Council of Ontario Universities, Entering Grade 13 Averages (various years)

These disparities illustrate **Simpson's paradox** which states that *the average value of a variable for a population may change more or less (or even in the opposite direction) than the value for all subgroups if the proportions represented by these subgroups change.* For example, assume that over a period of time the proportion of females in school A **declines** from 30% to 25% while its student population increases from 100 to 120. At the same time, the proportion of female students in school B also **declines** from 70 to 65% while its student body grows from 100 to 280. For the two schools combined, female representation would have **increased** from 50% to 53%.[21]

In our case, the increase in available spaces at universities with higher admission standards resulted in a rapid escalation of their cutoff marks. As students were diverted to the remaining universities, the higher-than-average growth rates in applications rapidly pushed up their entering marks as well. This is confirmed by the fact that if universities are ranked in descending order of their median entering marks in 1993, *each of the top eight (Queen's, Waterloo, Toronto, McMaster, Guelph, Wilfrid Laurier, Western and Trent) had a smaller share of the total first-year enrolment in 1993 compared to 1983, while each of the remaining seven (Ottawa, Brock, Windsor, York, Lakehead, Laurentian and Carleton) increased its share.* Within this framework, individual variations in cutoff, median and mean entering marks can be linked to changes in the number of applications, the number of admissions and grade inflation for applicants to each university.

CONCLUSION

The data we have presented do not lend support to the perception of rapidly escalating university admission standards in response to or as a cause of grade inflation at the high school level. Many of the changes that have occurred since the early 1980s can be explained in terms of demographic and behavioural changes affecting the number of secondary school applicants as well as in terms of political and economic forces that determine how many students are admitted into the university system. On this basis, we could anticipate that entering averages will show an accelerating upward trend as universities confront a sombre financial outlook and respond to their deteriorating budgetary conditions by restricting their annual student intake, although this upward trend may be mitigated by the slowdown in the growth of applications.

Many Ontario teenagers may be unnecessarily prolonging their stay in high school and/or resorting to various strategies that may ultimately be self-defeating or wasteful as these students respond to erroneous signals. Meaghan and Casas (1995a) have documented the fact that while the introduction of OACs to replace grade 13 was expected to substantially increase the proportion of students graduating in twelve years, the percentage of 18 year-old secondary school applicants **declined** substantially from 14.8 to 9.2 between 1980 and 1993, while the proportion of twenty-year old applicants rose from 10.2% to 15.7% during the same period. We believe these facts need to be presented and their implications discussed to prevent rumours and false perceptions from adversely impacting on students and schools. Universities also need to become more sensitive to the impact of their admission policies on secondary schools. Proposed changes such as the use of school rankings (Casas & Meaghan, 1996b) and standardized test scores, automatic discounting of marks in repeated courses and increased weights for specific subjects in the admission average may enable universities to improve the selection process in the short run but may prove detrimental in the longer term as students and schools adjust to these changes.

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Notes

[1] Under the directives of the 1984 Ministry of Education circular **Ontario Schools: Intermediate and Senior Divisions (OSIS),** the requirements for the Ontario Secondary School Diploma (OSSD) were set at a minimum of 30 full-year credits beginning in grade 9, including 16 compulsory and 14 elective credits. While five grade levels are offered in several subjects, students taking a full course load of 8 credits each year can complete the OSSD requirements by the end of grade 12 — a practice incongruously described as *fast-tracking*. Courses offered at the most advanced level — replacing the grade 13 credits — are designated as Ontario Academic Courses (OACs) and while no OAC is prescribed for the OSSD, 6 OACs are required for admission to university. When a student completes more than 6 OACs, the average of the six highest marks is used for university application purposes.

[2] While some of these practices have been described in media reports (see, for example, Crawford, 1993), there has not yet been a systematic effort to document or quantify them. The terminology used here is offered to help organize the discussion on this issue.

[3] Since only the highest mark is retained in the student record, there is no penalty for repeating. The incidence and effects of OAC repeats are investigated in Casas and Meaghan (1996a).

[4] Reminiscing about her last year in high school, Wilfrid Laurier University freshman Kathleen Cawsey (1993) recalls that "after April 15, nothing mattered. Time was up, the verdict

was set in stone, judgement passed. Now all we have to do is wait for June - when we find out who made heaven, and who's in hell." In a recent study, Casas and Meaghan (1995a) found that the slumping effect as measured by the discrepancy between interim and final marks was consistently larger for males than for females and in science and mathematics compared to languages and social sciences.

[5] See Casas and Meaghan, 1995b.

[6] Similarly, in justifying why the proportion of students graduating from Upper Canada College — an elite Toronto private school — with an average higher than 80 % has nearly quintupled from 12.9% to 71.9% between 1966 and 1992, the school's Vice-President, V. Mould, complained that the "whole system has been jacked up." See Daly, 1994.

[7] For example, Bejar and Blew (1981) showed that freshman GPAs are more strongly correlated with high school records than with SAT scores. Owen (1985) has also noted that SAT scores are not strongly correlated with first-year university marks but that they are good predictors of marks in another standardized test, the Graduate Record Examination (GRE)! As reported by Jacobson (1993), a USC study found no significant difference in Ph.D. attainment rates between students with relatively high GRE scores and those with low scores.

[8] In a six-year study, Crouse and Trusheim (1988) showed that the SAT has an adverse effect on black and low-income applicants for university admission while Rosser (1989) reported that the SAT is biased against women, under-predicting their grades at the postsecondary level. Many of the arguments in the recently renewed debate over standardized testing are surveyed in Meaghan and Casas (1995b). In a recent study, Anderson, Benjamin and Fuss (1994) found that the best predictor of student performance in introductory Economics is the overall achievement level in high school and they noted that "there are no uniform entrance examinations such as SATs in Ontario, and the variation in quality of instruction and grading practices across high schools might be expected to insert substantial noise into the relationship between performance in high school and performance in introductory university courses . . . This presumption is apparently untrue."

[9] The implicit cost — in the form of foregone lifetime earnings — of spending an additional year in high school may well be a stronger disincentive to students from lower economic strata, although this may be offset by the higher expected earnings associated with a university degree (or a degree from a more prestigious university or in a more marketable discipline).

[10] In its report to the Ontario Royal Commission on Learning, the Council of Ontario Universities (1993) expressed concern about this possibility but did not examine whether university admission requirements had indeed been rising. The brief did refer to a rise in the proportion of Ontario Scholars (graduates with 80% or more) among secondary school graduates between 1983 and 1992 as evidence of grade inflation in high schools, but this statistic uses an arbitrary criterion and is consequently inadequate to reflect the overall performance or quality of the various cohorts of graduates. This is especially the case because the very low percentage of university registrants with an average of 79 and the unexpectedly large proportion with an average of 80 clearly indicate that considerable grade adjustments occur in that range, thereby inflating the number of Ontario scholars with little impact on average high school grades or their distribution.

[11] King and Peirt (1994) also found that marks awarded in night and summer school were consistent with those in regular day programs and that averages for students in separate (Catholic) schools were similar to those for public school graduates.

[12] For example, Trow (1977) found that the percentage of students with a B+ average in a national sample had doubled from 18 to 36 between 1969 and 1975. See also Potter 1979.

[13] Detailed and comprehensive data on secondary school university applicants and registrants in Ontario from 1973 to 1994 are found in Casas (1995).

[14] What is commonly described as the cutoff point does not, in fact, refer to the lowest average mark for all students admitted into a university or a program but rather to a standard set by each university (or by individual programs or faculties within a university) for *automatic* admission. However, each university also sets aside a small proportion of its first year admissions for special cases and for candidates whose marks fall within a discretionary range below the cutoff mark (for such candidates, factors other than marks are taken into consideration). Thus, a university may decide that setting a minimum mark of 72 will attract a sufficient number of applicants (taking into account the proportion of students who decline offers of admission) to fill, say, 90 percent of the available spaces.

[15] The approach used here is similar to the construction of grade indices discussed by Wegman (1987). Implicit in our analysis is the assumption that the population of first year registrants closely mirrors the population of applicants above the cutoff point. On the other hand, students admitted below the cutoff point constitute a small proportion of the applicant pool and are not selected on the basis of their entering marks.

[16] Each applicant is allowed a maximum of three choices of programs at one or more universities and the larger increase in the overall number of applications resulted from the average number of choices per applicant rising from 2.84 in 1983 to 2.94 in 1993.

[17] For arts and for science, the changes were computed over the 1984-93 period as the University of Toronto data for 1983 did not differentiate between these two programs.

[18] The *t*-statistic for the coefficient of (PCA - PCR) shows that it is significant at the 99.5% level of confidence. Using changes in applications (PCA) and in registrations (PCR) as separate independent variables in the regression did not improve the fit significantly, raising the R^2 very marginally to 0.839.

[19] For example, applicants to the commerce program at the University of Toronto must complete OACs in English, calculus and one other mathematics course, while the engineering program requires English, calculus, algebra, physics and chemistry.

[20] Ryerson Polytechnic was not included as figures from that institution were not reported until 1989. The weights used to calculate the average increase in the cutoff mark were the number of registrants at each university in 1983. Readers familiar with price indices will recognize that this procedure is equivalent to the construction of a Laspeyres index which overestimates the true change in a variable; using the 1993 registrant figures yields a Paasche-like underestimate of 5.7 for the average increase in the cutoff mark for the 15 universities. For a discussion of Laspeyres and Paasche indices, see Salvatore (1994, pp. 114-117).

[21] A more dramatic example of Simpson's paradox was the fact that during the 1980s, every ethnic or racial population in the U.S. maintained or improved its average SAT score but the combined average score declined during the same period. As demonstrated in a report prepared for the Sandia National Laboratories (1993), the decline in the average score did not reflect decreasing student performance but the fact that more students in the bottom half of their classes were taking the SAT than in earlier years.

Access to Higher Education in Canada

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ABSTRACT

This paper examines changes in access to higher education in Canada for individuals born in the first half of this century. The data show variations in attendance at, or graduation from, university or non-university, postsecondary, educational programmes by gender, language group, and socioeconomic background. The statistical analysis uses information from a large, nationally representative sample of Canadians. Results show a process of democratization at the postsecondary non-university level, but only a modest reduction in disparities at the university level.

RÉSUMÉ

Cet article est un examen des changments encourues eu égard à l'accessibilité à l'enseignement supérieur au Canada pour les personnes nées dans la première moitié sexe, langue maternelle et milieu socio-économique pour les inscrits et les diplômés de niveau universitaire ou de niveau postsecondaire autre qu'universitaire. L'analyse statistique utilise les donnés d'un échantillon grand et représentatif de la population du Canada. Les résultats révélent une plus grande démocratisation ou niveau postsecondaire autre qu'universitaire tandis que l'affaissement des disparités est plutôt négligeable à l'université.

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At the turn of this century Canadian higher education was predominantly, although not exclusively, the preserve of upper class, Anglo-Canadian males. Clearly this is no longer the case. While it might be tempting to believe that the attainment of higher education is now independent of an individual's gender, ethnicity or socioeconomic background, contemporary evidence shows such a view would be unfounded (see e.g., Anisef, Okihiro & James, 1982; Lennards, 1983). Although accessibility is presumably more open now, it is unclear exactly how much democratization in higher education has occurred over the course of this century.

Given the massive quantities of public monies provided for education, the great expectations held by many people for the fruits of educational expansion, and the innumerable discussions educators, sociologists and others devoted to equality of opportunity debates, it is astonishing to find that little empirical evidence is available to document *changes* in the degree of access to postsecondary schooling. Testimony to this void is found in Robert Pike's lament, in his 1970 report for the Association of Universities and Colleges of Canada, that the "lack of contemporary research on the changes which may have occurred in class differentials in educational opportunity . . . is quite deplorable" (p. 55).

Over the last decade some research has been undertaken to fill this void. First, Harvey (1977) compared national samples of postsecondary students from the periods 1968-69 and 1974-75 in an effort to detect trends in enrolment patterns by gender and socioeconomic background. His general findings were that women's enrollment had increased over the six year period, as had the proportion of students from lower socioeconomic backgrounds, although the latter increase tended to be less pronounced. Second, Anisef, Okihiro and James (1982) used special computer runs from the 1971 and 1976 Canadian censuses to monitor accessibility to postsecondary education in Ontario. For women and for most ethnic groups, they documented significant gains in access at both postsecondary university and non-university levels. However, contrary to Harvey's results, they found no evidence of a narrowing in the educational disparities between social classes.[1]

While both studies represent commendable beginnings to a research programme focused on past, present and future changes in accessibility to higher education, these first studies constitute only limited approaches to the study of change since they focus on periods of less than a single decade. But, despite the limited empirical evidence on changes in accessibility, several social commentators have speculated on trends in educational democratization. Sutherland (1975), for example, claims that "mass education has ensured that the old divisions of power and resources were maintained and extended into nineteenth and twentieth century urban and industrial society" (p. xvii). In a similar vein, Lennards (1983) suggests that "educational expansion has not succeeded in reducing existing social class differentials in university attendance" (p. 452).

Although no one familiar with the issue claims that class background and postsecondary access are unrelated, some commentators have indicated modest decreases in the disparity between classes. Pike (1980) suggests that, while small changes may have occurred over time in the class composition of university students, much more dramatic democratization characterizes community colleges. Harvey's (1977) evidence provides mixed support for this contention (see also Goyder, 1980).

With respect to historical differences in attainment for women and ethnic minorities, many writers suggest that more equitable participation has recently occurred (e.g., Gaskell, 1981; Lennards, 1983; Pike, 1980). The general consensus is that democratization of higher education by gender and ethnicity began primarily in the 1960s and continued through the 1970s.

Based on the preliminary research noted above, and attending to the comments of those writing about access to higher education, three contrasting hypotheses can be distilled from the existing literature. After describing each hypothesis immediately below, I proceed to examine empirical evidence designed to test the relative merits of each.

One hypothesis, the constant gap hypothesis, predicts that over time, in higher education, the relative proportion of individuals from different class, gender or ethnic backgrounds has remained fixed. While we know that the number of postsecondary students has increased over time, under this hypothesis increases should have come equally from all groups. This hypothesis would be supported by those who believe the educational system has done nothing to ameliorate the attainment chances of individuals from disadvantaged groups.

A second hypothesis, the steadily declining gap hypothesis, predicts that over time there has been a constant narrowing of the gap in participation rates between groups. The increasing numbers of postsecondary students are thought to come disproportionately, relative to some previous point, from one particular group. For example, to achieve a narrowing of the gap between men and women at the postsecondary level, there must have been a growing proportion of women relative to men in each successive time period, although there may still be more men than women at postsecondary institutions. This hypothesis is supported by those who believe that, with the relative progress of this century, there has been a concommitant increase in the equality of educational opportunity.

A third hypothesis, the accelerating decline hypothesis, also postulates a narrowing of the gap between groups, but considers the rate of this convergence to be accelerating in recent times. This means that, over the years, the proportion of students in higher education from one group increases, relative to a second group, at a *rate* which grows as time passes. For example, the percentage of students from lower class backgrounds, as compared to upper class backgrounds, grows at an exponential rate. Support for this hypothesis comes from those who believe that the rapid post-WW II expansion of the postsecondary system led to a greater democratization of higher education.

For gender and ethnicity, the general consensus is that the accelerating decline hypothesis holds for all levels of postsecondary education (see e.g., Anisef, Okihiro & James, 1982; Lennards, 1983). For socioeconomic status, the most popular prediction is that the constant gap hypothesis holds at the university level (references above), but the accelerating decline hypothesis fits more closely at the community college level (references above).

Despite a wealth of speculative comment, there is little in the way of published research illustrating which pattern, hypothesized above, best conforms to the historical development of Canadian education. Using a large national sample, I endeavour to trace alterations in rates of higher educational participation between the 1920s and 1970s by gender, socioeconomic origin, and language group. The evidence discussed below indicates that university accessibility has become more attainable for women and French-Canadians, although little democratization by socioeconomic origin has occurred. Furthermore, the evidence highlights an increasing duality in postsecondary education, where colleges and universities serve different social groups.

METHODOLOGICAL ISSUES

Before proceeding to outline the data and methods used here to evaluate changes in equality of access, I should briefly comment on different issues involved in assessing educational inequality (the following draws upon Mare, 1980; and Sinikus & Andorka, 1982). During this century the average level of education of the Canadian population has increased. Concurrent with this increasing average, the difference between the most and least educated groups has narrowed. In statistical terms, while the mean or average has risen, the variance or standard deviation of the schooling distribution has been reduced (see results in Harp, 1980; Hunter, 1981).[2] Although the dispersion of the educational distribution has narrowed over time, this says nothing about whether the processes that allocate people to different levels of schooling have changed. That is, ascriptive procedures, as opposed to achievement processes, may still operate.[3] In addition, the distribution may have narrowed because of changes at various levels of schooling such that processes occurring at the secondary and post-secondary level need not be identical.

Table 1, containing data from Lagace (1968), provides a concrete illustration of some of the points mentioned above. The table cross-classifies individual university attainment by birth cohort and father's education, for males responding to the January 1966 Canadian Labour Force Survey (N = 35,000). The figure in each cell of the table represents the percentage of respondents who reported university degrees. For instance, the figure of 49.1 percent in the top left-hand cell means that for those respondents in the 1902-21 birth cohort whose fathers had a university education, almost half obtained their own university degree.[4]

While social scientists have become skilled in interpreting simple contingency tables, problems of interpretation arise in analyzing issues of trend using cross-classified data, such as in Table 1. Although the percentages for individual cells may hold some intrinsic interest, far more about patterns of change can be learned by comparing trends in cell ratios. Using father's education as a crude measure of social origin, relative class

Table 1

University Degree Attainment by Birth Cohort and Father's Education (Males only)[1]

	Birth Cohort		
	1902-21	1922-41	1942-46
Father's Education			
University Degree	49.1%	56.9%	60.9%
Non University	8.2%	11.9%	22.7%
Disparity Ratio	5.99:1	4.78:1	2.68:1
Log Distance	1.78	1.56	0.99

[1] Source: Michel D. Lagace (1968), Educational attainment in Canada: Some regional and social aspects. Dominion Bureau of Statistics, *Special Labour Force Studies*, Number 7, October. (Calculations are my own.)

chances can be examined by computing disparity ratios (the ratio of the percentage from each social background obtaining university degrees).[5] These ratios, displayed in the third row of the table, show that early in this century the chance of obtaining a university degree was six times more likely for men from privileged backgrounds (i.e., those whose fathers had university degrees), relative to men whose fathers were less privileged. These relative chances appear to have declined substantially for those born in the 1942-46 period where the odds were somewhat under three to one. However, in all likelihood this trend is exaggerated. Respondents born in 1945 or 1 946, answering a 1966 survey, are only in rare instances going to be able to claim a university degree. Furthermore, in all probability more sons from privileged backgrounds were still pursuing university degrees in 1966 relative to sons from less privileged backgrounds. Therefore the apparently large narrowing of the gap in the final cohort is probably, at least partially, spurious.

We also know that educational inequalities occur at each level of schooling. Therefore, as Pike (1980) notes, "much of the social selection for postsecondary education actually occurs through processes of selection which occur long before, in elementary and secondary schools"(p. 134; see also Porter, 1970). That is, calculating higher educational attendance rates as a proportion of all persons born to a particular cohort (as in Table 1) captures the *cumulative* impact of background attributes over all levels of schooling. While examination of these cumulative effects are appropriate for some purposes (see below), *specific* postsecondary effects can also be calculated. To do so requires comparing the number of people going on to some form of postsecondary education with the number of individuals eligible to do so. As before, these more specific transition rates may be cross-classified by the independent variables of interest.

DATA AND METHODS

The three hypotheses outlined above were tested using data from the 1973 Canadian Mobility Study conducted by Boyd et al. (1981). The final sample consisted of 44,867 male and female respondents, over the age of 17, who were not full-time students (the student constraint is returned to below). The analysis was restricted to a subset of this larger sample by focusing on *birth cohorts* composed of respondents born in Canada between 1910 and 1949.[6]

The following procedures were used to measure the variables of interest. Access to higher education was measured by answers which respondents gave to questions concerning their attendance at postsecondary educational institutions. Birth cohorts, used to assess changes over time, were based on individual reports of year of birth. Ethnicity was based on language group — either English or French.[7] Socioeconomic background was based on father's occupation (at the time the respondent was 16). Four occupational categories were used — farmers, blue collar, white collar, and professional/managerial (prof/man) workers.

A series of caveats accompany interpretation of this data. First, the use of birth cohorts with cross-sectional data is subject to problems of differential cohort mortality, as well as the fallibility of the memories of older respondents (see the discussion in Halsey, Heath & Ridge, 1980). Second, the focus is upon access to postsecondary education, and the quality of education is not examined. Third, although a distinction between community college and university education is made, no finer distinctions are assessed. Fourth, regional patterns are not examined. Fifth, the analysis strategy relies on bivariate comparisons and no higher order interactions are considered.[8] Sixth, undoubtedly some respondents will have improved their educational credentials after the survey was conducted, via continuing or adult education, and these improvements remain unexamined.[9] Despite these limitations, an initial examination of national changes over the course of this century provides some significant detail concerning the extent of democratization of higher education.

Data Analysis

Table 2 provides a cross-classification of birth cohort and socioeconomic background for respondents who reported some postsecondary educational experience. As revealed by the column totals, the overall percentage of respondents with such experience has increased from 23.2 percent for the earliest birth cohort (1910-14), to 46.6 percent for the last cohort (1945-49). This means that slightly more than one-fifth of those people born just prior to WW I, obtained some postsecondary education, whereas for those born just after WW 11, almost half obtained such experience. Furthermore, when assessing increases across cohorts within each specific socioeconomic category (e.g., farm, blue collar, etc.), the percentages have also risen.

Table 2

Postsecondary Attendance (%) by Father's Occupation and Birth Cohort

	Birth Cohort								
	1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44	1944-49	Row Totals
Father's Occupation									
Prof/Man	45.2 3.0:1 1.10	45.7 2.6:1 0.97	47.2 2.7:1 0.99	46.6 2.3:1 0.83	52.7 2.2:1 0.78	60.0 2.1:1 0.72	62.5 1.7:1 0.51	65.2 1.6:1 0.47	55.9 (4072)
White Collar	37.9 2.5:1 0.93	34.7 2.0:1 0.70	42.2 2.4:1 0.88	42.2 2.1:1 0.73	43.1 1.8:1 0.58	47.7 1.6:1 0.49	53.0 1.4:1 0.35	52.6 1.3:1 0.26	46.4 (2290)
Blue Collar	19.8 1.3:1 0.28	20.0 1.2:1 0.15	22.2 1.3:1 0.23	21.4 1:1 0.05	24.7 1:1 0.02	30.1 1:1 0.03	38.0 1:1 0.03	37.5 .9:1 – 0.08	28.8 (9388)
Farm	15.0 1:1 0	17.3 1:1 0	17.5 1:1 0	20.4 1:1 0	24.1 1:1 0	29.1 1:1 0	37.5 1:1 0	10.7 1:1 0	24.3 (5883)
Columns % Totals[1] N	23.2 1687	24.4 2262	26.2 2532	27.2 2545	31.4 2695	37.4 2562	44.8 3208	46.6 4145	 21,632

[1] The total N for each column (e.g., 1687 in column 1) represents the total number of native-born Canadians in the sample for each birth cohort.

Although the proportion of respondents in each cohort who report postsecondary attendance has risen for each socioeconomic category, the three hypotheses focus upon whether such increases are constant across groups, or whether the rates are converging in either a steady or accelerating pattern. The disparity ratios suggest that the influence of socioeconomic background oil postsecondary attendance has steadily decreased over time; the log-distance measures reveal a similar pattern. For the earliest cohort, respondents from prof/man backgrounds were three times more likely than their rural peers to acquire some postsecondary training. the disparity ratio is 3.0:1, the percentage difference is 45.2 versus 15.0. In the 1945-49 cohort the relative odds had decreased to 1.6:1. Other comparisons (e.g., prof/man versus blue collar) also reveal a steady decline in the importance of socioeconomic background. Of all the possible comparisons, it is only with respect to differences between people from white collar versus prof/man backgrounds that no reduction in disparity has occurred.

In Table 3 the analysis narrows to an assessment of socioeconomic trends for those who report a university degree. The patterns here are strikingly different from the previous table, and there is certainly no steady decline in disparity ratios over time. Neither does it appear that the rates are perfectly constant across time, although how substantially

Table 3
Attainment of a University Degree (%) by Father's Occupation and Birth Cohort

	Birth Cohort								
	1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44	1944-49	Row Totals
Father's Occupation									
Prof/Man	7.5 3.3:1 1.18	10.2 4.1:1 1.41	11.6 7.7:1 2.05	12.3 4.1:1 1.41	17.3 4.8:1 1.57	21.2 3.8:1 1.33	22.3 3.4:1 1.23	19.6 2.5:1 0.93	16.8 (4073)
White Collar	9.3 4.0:1 1.40	4.2 1.7:1 0.52	6.3 4.2:1 1.44	7.6 2.5:1 0.93	9.9 2.8:1 1.01	8.1 1.4:1 0.37	10.6 1.6:1 0.49	11.6 1.5:1 0.41	9.1 (2290)
Blue Collar	2.0 .9:1 – 0.14	2.7 1.1:1 0.08	3.0 2.0:1 0.69	2.4 .8:1 – 0.22	3.3 .9:1 – 0.09	4.6 .8:1 – 0.20	5.9 .9:1 – 0.10	6.3 .8:1 – 0.20	4.2 (9388)
Farm	2.3 1:1 0	2.5 1:1 0	1.5 1:1 0	3.0 1:1 0	3.6 1:1 0	5.6 1:1 0	6.5 1:1 0	7.7 1:1 0	3.9 (5883)
Columns %	3.6	3.9	4.1	4.8	6.6	8.3	10.0	10.4	
Totals N	1686	2262	2532	2545	2695	2561	3207	4146	21,633

the disparities have narrowed in the last two or three cohorts is difficult to pinpoint. First, when comparing those from white collar backgrounds with those from either blue collar or farm backgrounds, a reduction in disparity ratios exists (from the 3:1 range to the 1.5:1 range).[10] Second, comparing respondents from prof/man backgrounds to those from either blue collar or farm origins reveals a curvilinear pattern, in that initially the disparities diverge, only to converge in the later periods. Certainly a comparison of those born in the twenties and those born in the forties suggests a modest convergence. Finally, comparing people from prof/man and white collar origins presents a mixed pattern showing little discernible difference over time (as in Table 2).

While the data suggest that some reduction has occurred, this interpretation may be premature if we consider that by 1973 some potential respondents, born in the last cohort, probably had not completed their education and therefore were ineligible for the sample. If this possibility is similar for each socioeconomic category, then no problems arise. However, it is probable that more respondents from prof/man origins, who were still at school, were excluded, and therefore the 19.6 percent in the upper righthand cell is likely an underestimate. Thus, the reduction noted in Table 3 is probably even more modest than appears. Nevertheless, and especially when Lagace's (1968) results are also considered (Table 1), a minor shift toward equality of attainment has occurred.

A comparison of Tables 2 and 3 clearly reveals that the democratization of postsecondary education has not come about because of processes occurring at the university level. In terms of university degree completion only a minor reduction in socioeconomic disparities has occurred. Not only are socioeconomic disparities larger at the university level (compare log distances between Tables 2 and 3), but these inequalities have also receded only minimally when compared with the general pattern at the postsecondary level.

Striking differences between postsecondary exposure and university graduation are also apparent when focusing upon male-female differences. First, as shown in Table 4, females have generally had more exposure to postsecondary schooling, although the initial gap has closed in more recent cohorts. The higher enrolments of women in the early period stems largely from their participation in postsecondary teaching and nursing programmes, participation that was necessary in order to secure employment in a highly segmented labour force. The opposite pattern holds at the university level where men have always had the greater likelihood of graduating. This trend appears curvilinear, with the

Table 4

Postsecondary Attendance (%) and University Degree Attainment (%) by Sex and Birth Cohort

		Birth Cohort								
		1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44	1944-49	Row Totals
Level of Education	Sex									
Some Postsecondary Experience	Males	19.7 .8:1 −.23	19.8 .8:1 −.21	23.0 .8:1 −.18	24.7 .9:1 −.10	29.7 1:1 −.03	35.4 1:1 .01	42.2 1:1 −.01	44.1 1:1 −.01	31.5 (12,470)
	Females	24.9 1:1 0	24.5 1:1 0	27.3 1:1 0	27.3 1:1 0	30.6 1:1 0	35.3 1:1 0	42.6 1:1 0	44.9 1:1 0	33.8 (13,013)
Column % Totals N		22.2 2066	22.6 2747	25.2 3046	26.0 3014	30.1 3176	35.4 2988	42.4 3702	44.5 4744	25,484
Attain University Degree	Males	3.4 1.3:1 0.27	5.2 2.6:1 0.96	5.9 2.7:1 0.99	7.2 4:1 1.39	8.9 2.8:1 1.02	12.0 3.3:1 1.20	12.9 2.6:1 0.95	12.6 1.9:1 0.62	9.1 (12,469)
	Females	2.6 1:1 0	2.0 1:1 0	2.2 1:1 0	1.8 1:1 0	3.2 1:1 0	3.6 1:1 0	5.0 1:1 0	6.8 1:1 0	3.7 (13,014)
Column % Totals N		3.0 2065	3.6 2747	4.0 3046	4.4 3014	6.0 3177	7.7 2988	8.9 3702	9.6 4745	25,483

disparity between women and men growing until the 1930-34 cohort and then decreasing to about 2:1 by the last cohort [11]

Table 5 presents similar information although here the comparison is between French and English Canadians. At the general postsecondary level, the steady decline hypothesis fits the data reasonably closely. Over time the greater odds of the English receiving some postsecondary exposure have declined, although even in the last cohort the English have slightly better odds. Examining the pattern for respondents reporting university degrees reveals a modest, although by no means substantial, decline in the French — English disparity. The odds over the 1910-25 period favour the English by about 2:1 , decreasing in the later years to about 1.5:1 .

To this point the analysis has focused upon the percentage of all people in a given cohort who have attended or attained some form of postsecondary schooling. The disparities found could, however, have occurred for a variety of reasons, including failure to complete high school or deciding not to continue school even though technically eligible. The final table therefore examines respondents who report obtaining a university degree, as a

Table 5

Postsecondary Attendance (%) and University Degree Attainment (%) by Language Group and Birth Cohort

		Birth Cohort								
		1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44	1944-49	Row Totals
Level of Education	Language Group									
Some Postsecondary Experience	English	28.1 3:1 1.12	26.8 2:1 .70	31.3 2.3:1 .82	31.3 2:1 .62	34.9 1.7:1 .53	40.5 1.6:1 .47	46.6 1.3:1 .30	47.9 1.3:1 .24	37.5 (16,982)
	French	9.2 1:1 0	13.3 1:1 0	13.8 1:1 0	15.8 1:1 0	20.4 1:1 0	25.4 1:1 0	34.6 1:1 0	37.6 1:1 0	23.6 (13,013)
Column %		22.7	23.2	25.7	26.0	30.3	35.7	42.8	44.5	
Totals N		2066	2747	3046	3014	3176	2988	3702	4744	24,883
Attain University Degree	English	3.7 2.5:1 0.27	3.9 1.3:1 0.96	5.1 2.4:1 0.99	5.0 1.5:1 1.39	7.1 1.7:1 1.02	8.4 1.3:1 1.20	10.3 1.6:1 0.95	10.9 1.6:1 0.62	7.4 (16,982)
	French	1.5 1:1 0	2.9 1:1 0	2.1 1:1 0	3.3 1:1 0	4.2 1:1 0	6.6 1:1 0	6.4 1:1 0	7.0 1:1 0	4.6 (7901)
Column %		3.1	3.7	4.1	4.4	6.2	7.8	9.0	9.7	
Totals N		1990	2655	2950	2943	3094	2941	3640	4670	24,883

percentage of those eligible to proceed to university. For this table the percentage base shifts from all people in a cohort to those in a cohort who are eligible to attend university.[12]

The most telling piece of information in Table 6 is the minimal increase over time in the percentage of eligible Canadians who go on to complete a university degree. Whereas in cohorts from the 1910s and 1920s about 30 percent of eligible Canadians reported receiving university degrees, this percentage has risen to only 36 or 37 percent for those born in the 1940s. The much touted expansion of higher education has had, at best, a modest impact on the percentage of eligible Canadians receiving university degrees.[13]

With respect to differences by socioeconomic status, the greatest advantage has accrued to those from white collar backgrounds. Individuals from white collar origins have done relatively better than people from either blue collar or farm backgrounds, and they have gained ground on those from prof/man families. A comparison of prof/man with both blue collar and farm respondents suggests virtually no change over time. Moreover, the greater ability of farmers' sons and daughters, relative to individuals from blue collar homes, to complete degrees once eligible for university is both unexpected and interesting.

Table 6

Attainment of a University Degree (%) for Eligible University Students by Father's Occupation and Birth Cohort

	Birth Cohort								
	1910-14	1915-19	1920-24	1925-29	1930-34	1935-39	1940-44	1944-49	Row Totals
Father's Occupation									
Prof/Man	41.0 1.1:1 0.01	41.3 1.7:1 0.52	43.6 1.6:1 0.47	42.0 1.4:1 0.43	48.6 1.8:1 0.57	50.5 1.4:1 0.34	50.0 1.7:1 0.52	50.4 1.5:1 0.42	47.7 (2412)
White Collar	48.3 1.3:1 0.23	25.0 1:1 0.02	26.2 1:1 – 0.04	32.4 1:1 0.17	34.4 1.2:1 0.22	34.7 1:1 – 0.03	37.6 1.3:1 0.25	41.3 1.2:1 0.22	36.1 (1171)
Blue Collar	25.5 .7:1 – 0.41	22.4 .9:1 – 0.09	27.5 1:1 0.01	22.5 .7:1 – 0.19	24.2 .9:1 – 0.13	27.9 .8:1 – 0.25	29.6 1:1 0.01	26.6 .8:1 – 0.22	26.5 (9388)
Farm	38.4 1:1 0	24.6 1:1 0	27.2 1:1 0	22.5 1:1 0	24.2 1:1 0	27.9 1:1 0	29.6 1:1 0	26.6 1:1 0	26.5 (1579)
Columns %	36.3	28.9	31.8	31.2	33.4	36.8	36.5	35.6	
Totals[1] N	424	633	732	764	943	1027	1580	2242	8246

[1] The total N in this table (8,246) represents the total number of native-born Canadians in the sample who report completing high school.

The findings in Tables 3 and 6 suggest that massive increases in government spending on higher education[14] and the institution of student aid programmes[15] did little to increase equality of opportunity at the university level. While the figures in Table 2 reveal reduced socioeconomic disparities for postsecondary education, this reduction must have come from one main source. The rapid emergence of community colleges or technical institutes in all provinces created opportunities for individuals from farm and blue collar backgrounds. General postsecondary reductions in socioeconomic disparities are thus largely results of non-university higher educational expansion (see Pike, 1981).

DISCUSSION AND CONCLUSION

The central purpose of this paper has been to examine, using a large national sample, the long-term historical trends in access to higher education. The main findings can be summarized as follows. First, an overall reduction in educational disparities has occurred at the postsecondary level with respect to gender, language group, and socioeconomic background. This is in general accord with the steadily declining gap hypothesis. Second, although disparities have been reduced, they have been eliminated only in terms of differences between men and women in general postsecondary participation rates. Third, with respect to university degree attainment, reductions in disparity have been minimal, with the greatest convergence coming in terms of French-English differences.

These findings raise four important issues: has a dual higher educational system evolved in this country; does the data reveal a trend toward greater accessibility as opposed to an historical anomaly soon to be reversed; what policy relevance stems from inequities in the distribution of opportunity; and finally what does this mean for the place of university education in the contemporary world?

The effects of higher educational expansion in Canada, as this relates to equality of opportunity, would seem to have operated to preserve the place of privilege at the university level. At least for Canadians born in the first half of this century, chances for obtaining- a university degree have been consistently better for middle and upper class English-Canadian males. The democratization of postsecondary education, which clearly did occur, resulted mainly from the expansion of opportunities presented by the opening of numerous non-university colleges and institutes. This result is remarkably similar to the dual system of higher education described in both France and the United States (Patterson, 1976) and is clearly consistent with Porter's (1970) view that community colleges were "a major postsecondary alternative for lower social and economic strata" (p. 329).

Whether the level of democratization reflected above will be maintained over the next few decades is also unclear. While most of the postsecondary disparities examined persist, they have been reduced, although the permanence of the reduction may well be undercut as higher education faces increasing financial pressure from governments. If Porter (1979) is correct in arguing that the "full democratization of higher education requires innovation" (p. 195) and, if innovative programmes are curtailed in the wake of financial cutbacks, then retrenchment may reinforce the elitist leanings of postsecondary education.

Whatever the future directions of democratization, educational chances are currently unequal. The policy relevance of such inequality in the distribution of opportunity for higher education is difficult to overestimate. Increasingly occupational training, certification, and selection occurs through the educational system, particularly in postsecondary institutions. To the extent that this function is enhanced through time, while socially based disparities in opportunities for higher education (especially university) continue, then individual life chances must remain unequal. If higher education is contingent upon social attributes unrelated to academic ability — such as gender, ethnicity, and class — then in the end we waste precious resources by excluding gifted individuals.[16]

This is especially so if the postindustrial thesis of commentators such as Bell (1967) has any validity. If, as Bell argues, "the university will become the central institution of the next one hundred years because of its role as the new source of innovation and knowledge" (p. 30), then Canadian higher education seems woefully ill equipped. We will be forced to continue our history of reliance on imported knowledge generators, innovators, and managers (Blishen, 1970; DeVoretz & Maki, 1983) or rely on a depleted stock of native-born talent. The consequences of this could be bleak indeed, as Canada tries to cope in a global market economy increasingly wed to creative knowledge and innovation.

An important adjunct to this general argument is the finding that the material rewards for university graduates, at least in terms of occupational attainment, have been declining in recent years (Anisef, 1982; Goyder, 1980; Harvey & Charner, 1975; Harvey & Kalwa, 1983). At a time when disparities in university undergraduate degree completion may be weakening, the value of such undergraduate degrees wane. While this is apparently the case, it is significant that university-educated individuals have lower unemployment rates than those lacking university credentials. In addition, while the fortunes of university graduates may have been diluted somewhat, they are still better off than their community college peers (see, Goyder, 1980). Thus, while some of the benefits of a university education may have tarnished slightly, the value of such an experience remains high, although still more difficult for some to enjoy.

In conclusion, changes in accessibility to higher education operate at two levels. While disparities have been reduced at the non-university level, at the university level democratization has only begun as a slow process. Furthermore, while reductions have occurred, at both levels social attributes remain correlated with both access and attainment.

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Notes

1 This difference could be due to a number of factors. For example, the studies differ on the measurement of social class, the composition of the samples (Canada vs. Ontario), as well as the slightly different time periods involved.

2 This trend is not limited to Canada but rather has almost universal applicability in industrialized countries (see Kotwal, 1975). Technically speaking it is the level of schooling which is measured, as opposed to the level of education.

3 In fact it is *theoretically* possible that if schooling levels were once allocated randomly but are now allocated ascriptively, then even with a narrowing of the distribution of schooling the process would be more unjust. As Mare (1980) points out, distribution properties and allocation properties are conceptually independent.

4 Unfortunately Lagace (1968) reported data based on only three, uneven birth cohorts. Furthermore, his own interpretation of the data is rather brief. It is perhaps for these reasons that his results have not been cited by most writers noted above (the sole exception is Pike, 1970).

5 Halsey, Heath and Ridge (1980) introduce disparity, ratios ill their analyses of the U.K. school system. Owing to extremely low cell frequencies for some tables, they prefer to report "log distances" which are calculated by subtracting the natural logarithms of completion rates for specific categories. Log distances are reported here in all subsequent tables. These log distances also

provide some assurance that disparity ratios are not decreasing as a simple function of ceiling effects. This latter problem arises because percentage rates have an upper limit of 100 (see Guppy, Mikicich & Pendakur, 1984; Mare, 1980).

[6] The sample is weighted to correct for: i) initial sampling stratification; and ii) possible bias due to differential response rates.

[7] This measure used the language with which respondents were most comfortable at the time of the survey. All of the respondents included in the analysis were born in Canada.

[8] This may be an important omission in certain cases. The increased participation of women in universities, who tend to come from higher socioeconomic backgrounds than undergraduate men (Harvey & Kalwa, 1983), may account for some of the apparent stability in socioeconomic disparities. Examining this issue is beyond the scope of the present paper.

[9] This educational upgrading would present no problem in comparing rates across groups, if we could assume upgrading was pursued equally by all groups. This is highly unlikely (see e.g., Aliamad, Zussman & Bowen, 1976).

[10] It should be noted here that for the early periods the small sample size creates unstable estimates for specific cells. It is also here that social class differences in death rates may be most pronounced. However, the general pattern seems clear enough. The range of 3:1 for white collar respondents in the early period is a general average over the first four cohorts.

[11] This curvilinear pattern is corroborated by Statistics Canada data on bachelor and first professional degrees awarded to men and women. In the period 1925-45 women received about 30 percent of the degrees awarded. This figure dipped to approximately 23 percent in the 1950s and then grew to some 37 percent in the 1960s (Statistics Canada, 1978).

[12] This eligibility is measured by those respondents reporting either an academic high school certificate or some form of postsecondary experience. Eligibility is thus a measure of having completed the proper levels of schooling, but does not incorporate grades or examination success.

[13] It is important to recognize a distinction between the percentage of eligible people obtaining a degree and the percentage of eligible people. While the former has increased only some eight or so percent, the latter has increased from about twenty-five percent to fifty-four percent (dividing the cohort totals in Table 6 by the corresponding totals in Table 3 provides an estimate of the latter, whereas the trend in the column percentages in Table 6 reveals the increase in the former). The ability of universities to enroll a rising proportion of a substantially increased pool of eligible Canadians is important, even if it meant only modest headway in achieving more democratic participation.

[14] In 1950 the total financial expenditure on postsecondary education was $66.8 million (or approximately 0.36 percent of the Canadian GNP), climbing to $2,220.8 million (or about 2.6 percent of the GNP) in 1970. Most, although not all, of such expenditures are by governments. Of the 1970 figure, 80.6 percent was spent at the university level. From 1960 to 1970 community college funding increased 647 percent, while university funding grew by 556 percent. (Calculations are from Statistics Canada, 1978 and 1983)

[15] While the major aid programme, the Canadian Student Loans Plan, was established in 1964, the earliest concerted effort to provide public financial support to students came in the 1930s (see Pike, 1970; Porter, 1970). In 1957-58 "public financial aid amounted to $39.6 per full-time

undergraduate, increasing rapidly to $396.0 per student by 1967-68" (Pike, 1970, p. 157). Although I can only speculate as to what might have happened had such funds not been available, it would seem that student aid money was used mainly by the middle classes as an educational subsidy.

[16] Direct evidence for the assertion that individual talents are wasted is unavailable since unequal opportunities continue. There is evidence that increasing expenditures on U.S. education have increased economic output (Walters & Rubinson, 1983), but whether this is due to expanding opportunities is not clear. However, such inequality does run counter to a central tenet of liberal democracy, namely, the guarantee of "rights essential to the equal possibility of individual members using and developing their human capacities" (McPherson, 1978, p. 205).

Accessibility:
Students with Disabilities* in Universities in Canada

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ABSTRACT

Data indicate that the number of students with disabling conditions in postsecondary institutions is increasing. The efforts made by universities across Canada were examined to ensure that special needs students are able to access higher education programs. Services offered by the Office for Students with Disabilities at 27 Canadian universities were investigated. Physical accessibility for students with a wide range of handicapping conditions also was explored.

RÉSUMÉ

Les données indquent que le nombre d'étudiants handicapés dans les institutions postsecondaires en la hausse. La présent étude examine les efforts des universités canadiennes pour assurer aux étudiants souffrant d'handicaps physiques l'accès aux programmes universitaires. Les services offerts par l'Office des Étudiants handicapés dans 27 universités canadiennes sont étudiés. Les conditions d'accesibilité dans les bâtiments et sur les campus offert aux étudiants atteints de divers handicaps est également exploré.

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* The term "students with disabilities" is used to refer to individuals with either physical and/or learning impairments, including, but not limited to, persons with visual, hearing, orthopedic/physical, speech and specific teaming disabilities. Also included are persons with chronic health problems and individuals who are mentally ill. The terms "students with disabling conditions", "students with handicapping conditions", and "students with special needs" are used synonymously. The terms "the disabled", "the blind", "the deaf" will not be used, as it is the opinion of the author that the person should be viewed as an individual first — an individual who happens to have a disability.

INTRODUCTION

The number of Canadian students with disabling conditions, who attend postsecondary institutions of higher education after completion of high school, has increased dramatically over the past 10 to 15 years. Even though the enrolment of students with disabilities has increased, it has been reported that students with special needs are significantly under-represented in such institutions (Council of Ministers of Education, Canada [CMEC], 1987). The reasons for the under-representation of students with disabling conditions at Canadian universities have not been determined; however, in order for a student with special needs to pursue successfully a program of higher education, two basic obstacles must be overcome: (a) specialized services must be provided in order to maximize the student's ability to participate fully in the chosen course of studies, and (b) the campus must be physically accessible (i.e., the grounds and buildings must be barrier-free).

The needs of students with disabilities vary, depending on the type of disabling condition, the severity of the condition and, in some cases, the length of time that the student has had the condition (Hill, 1991). No two students, even if they have the same disability, have the same needs. The services they require differ widely, and can range from requiring specialized equipment and materials, such as brailled books for the student with a visual impairment, to requiring extra time to complete an assignment or an examination, as in the case of a student with a motoric handicap. Similarly the physical barriers differ, depending upon the type of disability of the student. Students who use a wheelchair as a means of locomotion require ramps to gain access to buildings, and elevators to move from floor to floor, whereas a student with a visual impairment may require braille labels on doorways to indicate room numbers and audible elevator signals to assist in locating a specific destination.

The purpose of the present article is to examine the level of accessibility for students with disabling conditions in universities across Canada, in order to identify specific problematic areas that might prevent students from pursuing a course of advanced studies. Specifically, in the present study, the availability of services required to meet a student's unique learning needs and the physical barriers present at universities in Canada that might impede a student from being able physically to gain access to programs of higher education are examined.

Enrolment Trends

A limited number of studies have documented the increased enrolment of students with disabilities in universities in Canada and the United States. Wilchesky (1986) stated that the number of students with a "self-identified handicap" at York University in Ontario rose from 19 in 1977 to 114 in 1984. Fichten (1988), citing enrolment statistics at Dawson College in the Province of Québec, reported an increase from 24 students in 1984 to 50 students in 1987; and the most recent study, conducted in the Province of Québec (Tousignant, 1989) found that the number of students with special needs enrolled in university programs throughout the province rose from 174 in 1980-1981 to 224 in 1988-1989. The Canadian statistics regarding increased enrolment of students with disabling conditions appear to be similar to those reported in the United States, where the number of individuals with disabilities and who are attending postsecondary institutions has shown a steady increase over the past 15-20 years. In fact, the rise in number has been described as "meteoric" (Wilchesky, 1986). Estimates of the number of college freshmen, self-identified as being physically impaired, rose from 2.9 percent in 1979 to 7.3 percent in 1984, an increase of approximately 150 percent (Wilchesky, 1986). However, to date, there has been no attempt to document the number of students with disabilities in relationship to the total enrolment of non-disabled students in universities, either in Canada or in the United States.

Many reasons have been given for the influx of students with disabilities and attending postsecondary institutions. Wilchesky, a Canadian, suggested that there were four principal reasons for the increased enrolment of students with disabling conditions in the United States (1986): (a) pressure from self-help and advocacy groups to accept, and accommodate special needs students; (b) projected decreased enrolment due to declining birth rate, which resulted in the search for "non-traditional" students;[1] (c) awareness of the broadening "social mission" of universities to provide more opportunities for students with handicapping conditions; and (d) passage of two major pieces of legislation that mandated the integration of both children and adults into the "mainstream" of society (i.e., Public Law 94-142, *The education of all handicapped children* and Public Law 93-112, *The rehabilitation act*, Section 504). In addition, Perry (1981) proposed that advances in medical technology and rehabilitation engineering have resulted in increased opportunities for those with a disability (e.g., allowing for greater independence); and Penn and Dudley (1980) suggested that regulations relating to minimizing architectural barriers have resulted in more campus buildings becoming accessible to persons with a physical impairment.

In discussing two pieces of legislation in Canada, Ontario's Bill 82, *An act to amend the education act*, proclaimed in 1980, and Section 15 of the Canadian Charter of Rights and Freedoms as set out in *The Constitution Act of 1982*, enacted in 1985, Wilchesky stated that "there are some early indications that postsecondary institutions in Canada should be preparing for a steady, and perhaps dramatic increase in the numbers of handicapped individuals interested in pursuing higher education" (p. 5). Sergent, Sediacek, Carter and Scales (1987) pointed out that "the needs of the disabled student on college campuses have become a national concern . . . more disabled persons are exercising *their rights* [italics added] to receiving higher education" (p. 3).

The Importance of Higher Education for Students with Disabilities

There are three primary motives for obtaining a postsecondary education, regardless of whether or not the student has a disabling condition. They include: (a) fulfilling personal goals, (b) allowing for effective competition in the job market, and (c) contributing to independence and financial security (Fichten, 1988). According to Fichten, for the student with a disability a "college education is *more important*" (p. 172). Citing previously published research, Fichten indicated that individuals with a disability who graduate from college spend less time seeking employment and are more likely to be employed than people with disabilities who do not have a degree; and once employed, they are more satisfied with their jobs and remain longer than those who never attended a postsecondary program. Fairweather and Shaver (1990) have suggested that, for the student with a disability, "postsecondary education is the *crucial link* [italics added] between high school and success as an adult" (p. 333).

In Canada, the need for access to educational programs, by those with special needs, has been clearly articulated. The Council of Ministers of Education in the recent document, entitled *Opportunities: Postsecondary Education and Training for Students with Special Needs*, stated:

> In view of the correlation between education or training and an individual's employability, members of these groups [i.e., women, Native citizens, the disabled, minority-language groups and educationally disadvantaged adults] must be given every *reasonable opportunity* [italics added] to prepare themselves for full participation in Canadian society. The prospect of continuing restrained labour market and economic conditions and an increasingly high degree of competitiveness for available jobs makes the need for sound education and training all the more pressing (CMEC, 1988, p. 8).

Even though the need for ensuring accessibility to higher education in terms of economic and social benefits for the individual and society has been recognized, many individuals with disabling conditions have not continued their schooling beyond the secondary level. According to the most recent census conducted in 1986, there were approximately 25.3 million individuals living in Canada (Statistics Canada, 1987). In a postcensal survey, *The Health and Activity Limitation Survey* (HALS), conducted by Statistics Canada between 1986 and 1987, it was found that approximately 3.3 million persons (i.e., 13.2 percent of the total population) reported having a physical or psychological disability[2] (Statistics Canada, 1990a). In the 15-64 year age-bracket, there were 1.7 million persons with disabling conditions (10.7 percent of the total population); 68.8 percent of the respondents indicated that they had not pursued any postsecondary education, and only 5.1 percent had obtained one or more university degrees. For the same age-bracket, the 1986 census showed that 57.4 percent of the non-disabled population had completed an elementary-secondary education, and that 11.0 percent had obtained one or more university degrees (Statistics Canada, 1989). It is unknown why there is such a discrepancy; however, availability of support services and accessibility to facilities are undoubtedly two of many factors that may prevent an individual with a disabling condition from pursuing a postsecondary education. Fichten (1988) stated:

> Institutions that discourage students who have a disability from applying, that place insurmountable physical and admissions barriers to them, and that do not provide services needed by the students or by the professors

> who teach them can cause the most damage by communicating to the college community the message that students with a disability are not welcome on campus (p. 181).

Ensuring Accessibility

Students with disabilities require a variety of support services and program modifications to be able to pursue successfully a postsecondary education (Hill, 1991; Marion & Iovacchini, 1983; Michael, Salend, Bennett & Harris, 1988; Sergent et al., 1987). Similarly, they need to be able physically to gain access to the grounds and buildings. The Statement by the CMEC (1987) succinctly outlined the need for such accommodations: "Assistance offered to special students *does not end* [italics added] with entry into a program of study" (p. 24).

The services, generally provided by a Coordinator or Director of Services for Students with Disabilities, need to be "diverse and multifaceted" (Sergent et al., 1987, p. 3) as the students themselves present a wide range of disabling conditions. (e.g., learning disabilities, physical impairments, chronic health problems). Services should be designed to minimize policy, social and architectural barriers encountered by students with disabling conditions (Stilwell, Stilwell & Perritt, 1983). In reviewing services to students with special needs, Sergent et al. (1987) stated that "current research findings suggest that while higher education institutions have made considerable progress in removing physical barriers [i.e., architectural barriers] for disabled students, fewer changes have occurred in the area of support services [i.e., policy and social barriers]" (p. 4). These findings may be explained by the fact that "architectural barriers are likely more easily changed than attitudinal barriers" (Wilchesky, 1986, p. 6).

Several studies have examined the availability of services to students attending postsecondary institutions in the United States (cf., Marion & Iovacchini, 1983; Sergent et al., 1987), the role of the Coordinator of Services for Students with Disabilities (cf., Michael et al., 1988) and the degree to which institutions have become accessible for students with varying types and degrees of handicaps (cf., Stilwell & Schulker, 1973; Stilwell et al., 1983). However, to date, similar studies have not been undertaken in Canada. It is known that "at many Institutions, resource persons have been appointed to provide advisory and consultative services to special students" (CMEC, 1987, p. 24); however, accurate information on the extent and the nature of services for students with handicapping conditions is unknown. Similarly, the extent to which Canadian universities are accessible has not been identified.

Purpose of Study

The enrolment in Canadian universities of students with disabling conditions has increased significantly over the past decade and will most likely continue to increase as more individuals recognize the necessity of obtaining a postsecondary education in order to be competitive in the restrained employment market. In order to accommodate the student with a disability, universities must be responsive to the student's unique learning needs. To accommodate the student, universities must be able to provide services necessary for the student to gain access to programs and to ensure that the facility is barrier-free. The purpose of this study is to examine the degree of accessibility of universities in Canada in an attempt to identify possible areas requiring improvement.

Specifically, the present study will attempt to answer the following research questions:

1. What is the proportion of students with disabilities within the general student population? What types of disabling conditions do students report? Is there a difference in the proportion or types for small and large institutions?[1]
2. What proportion of universities in Canada provide a person (or persons) whose designated job is to offer assistance to students with disabling conditions during their pursuit of a postsecondary education? What is the nature of the position (i.e., full time/part-time)? What type of training does the individual have? Do the proportion, employment status, or training requirements differ for small and large institutions?
3. Have universities developed specific policies regarding students with disabilities (e.g., admissibility of students; modifications to the course of study; criteria for accessing services)? Are there any policy differences between small and large institutions?
4. What is the nature of the services provided and how do students gain access to services? How is the program funded? Are there any differences in nature or funding between small and large institutions?
5. What is the degree of accessibility for students with disabling conditions and to what extent is accessibility affected by type of disabling condition? Does accessibility differ for small and large institutions?

By means of a survey questionnaire, Coordinators of Services for Students with Disabilities across Canada were requested to provide detailed information regarding the nature and extent of services provided at their respective institutions, and the degree to which the institution they represented was accessible. To encourage response from Coordinators, complete anonymity was assured in the covering letter sent with the questionnaire. The intent of the present report is to examine the nature of services provided across Canada by representative institutions (both small and large), not by individual postsecondary facilities; consequently the data obtained are reported without reference to specific institutions and/or specific persons.

Providing detailed information on the nature and extent of services available, and the extent to which universities are accessible for individuals, is important for several reasons (Sergent et al., 1987). Having knowledge about services that are currently available will allow staff at institutions of higher education (a) to gain insight into the progress made to date across Canada, (b) to evaluate their current programs, and (c) to identify services that need to be implemented to make campuses increasingly accessible. Given the increasing enrolment of students with special needs across Canada, this information is particularly timely.

It should be noted that no attempt was made, in the present study, to examine the nature and extent of services available at community colleges or trade schools in Canada. The focus of the present study is degree-granting universities.

METHOD

Participants

During the 1989-1990 academic year, surveys were mailed to the Coordinators of Services for Students with Disabilities at 46 major universities (anglophone and francophone) that offered a wide variety of programs to a large number of students across Canada. There are 69 public degree-granting institutions in the nation; however, not all universities were surveyed for the following reasons:

1. There are 19 universities that have an enrolment of fewer than 500 students (Statistics Canada, 1990b). Most of these institutions, while degree-granting, only offer a degree in a very specific area (e.g., military college; teachers' college; college of art). Considering the matters of small enrolment (and the probability of limited enrolment of students with disabling conditions) and the specificity of programs (and the possibility of a requirement that the applicant does not have a handicapping condition, as in the case of military colleges), the researcher determined that such institutions would not be representative of universities in general; they consequently were not included in the mailing.
2. Twelve universities are federated with a larger institution. The majority of the federated universities offer a very specific course of study (e.g., theology). Even though federated universities were not included in the survey per se, in each case the "parent" organization was included, if enrolment was over 500 students, and if a wide spectrum of programs were offered.
3. A few universities have multiple campuses. The survey was distributed to the main campus only, unless the satellite campus had more than 500 students, and offered a broad range of programs to the students.

The 46 institutions that met criteria for inclusion in the study were located throughout the country. Every province had at least one university that offered a wide range of programs to at least 500 or more students. The maximum number of institutions per province was sixteen.

The first mailing resulted in 20 returns (43.5 percent). A second mailing, sent to the Dean of Students at non-respondent universities, resulted in an additional 9 returns, for a total of 29 responses (63.0 percent). Two respondent facilities did not offer a wide spectrum of programs to a student body in excess of 500 students. The data from these institutions were not included in the final analysis.

The final usable sample consisted of 27 universities (58.7 percent). Nine of the ten Canadian provinces were represented in the final sample. Percentage of response by province ranged from 0 percent to 100 percent. Percentage of response was greater than 50 percent in seven of ten provinces. In four provinces, responses were obtained from all of the institutions surveyed (100 percent).

Instrumentation

A three-part questionnaire was developed to examine the range of services offered to students with disabilities at institutions of higher education in Canada. The first section included requests for information regarding the characteristics of the responding university (e.g., total enrolment, enrolment of students with disabilities, admission policy regarding students with disabilities, number of students by disability, sources of funding for programs) and of the Coordinator of Services for Students with Disabilities (e.g., training, experience, status of employment). The second section sought information regarding specific services available to the student from the Office of Services for Students with a Disability (e.g., academic counselling, priority class registration, provision of written/audio-visual information on available services). The final section contained questions about the degree of accessibility of the university for students with varying disabilities (e.g., braille/large print markings on doors for students with a visual impairment, amplification systems for the student with a hearing impairment, parking facilities for the motorically impaired).

The questions included in the survey instrument were developed from a comprehensive review of the literature on services for students with disabling conditions in post-secondary institutions (cf., Marion & Iovacchini, 1983; McGeough, Jungjohan, & Thomas, 1983; Michael et al., 1988; Sergent et al., 1987; Stilwell & Schulker, 1973; Stilwell et al., 1983; Wilchesky, 1986).

RESULTS

Institutional Characteristics

Frequencies and percentages of response were computed for each survey question, for both small and large universities. Small institutions were characterized as having fewer than 10,000 students in attendance, whereas large institutions had in excess of 10,000 students. Small institutions comprised 44.4 percent of the sample (n = 12), while large institutions comprised 55.6 percent of the total sample (n = 15). Information on respondent institutions (N = 27) is presented in Table 1.

Eighty-nine percent of the universities provided both undergraduate and graduate courses. Thirty percent of the universities reported that they had a specific policy

Table 1
Institutional Characteristics

	Size of Institution	
Institutional Characteristics	Small (n = 12)	Large (n = 15)
Total Enrollment [a]		
Range	1800-9745	10,000-40,000
Mean	5162	21,503
Enrollment of Students with Disabling Conditions [a]		
Range	11-81	33-300
Mean	39	121
Designated Coordinator of Services		
Yes	66.7	100.0
No	33.3	0.0
Degrees Offered (%)		
Undergraduate Only	25.0	0.0
Undergraduate/Graduate	75.0	100.0
Policy on Admission (%)		
Yes (written policy)	33.3	26.7
No	58.3	73.3
Did not Answer	8.3	0.0
Criteria for Services (%) [b]		
None	67.7	26.7
Any Documentation	8.3	40.0
Physician's Report	0.0	40.0
Assessment by Staff	8.3	20.0
Permanency of Disability	0.0	33.3
Self Referral	8.3	0.0
Depends on Service	16.7	6.7

[a] It should be noted that respondents often gave an approximate number for total enrollment (e.g., 5500), but, gave a specific number for the enrollment of students with a handicapping condition (e.g., 29).

[b] Several respondents indicated multiple criteria for service. Percentage totals to more than 100%.

regarding admission of students with disabling conditions. The policy, in most cases, dealt not only with admission criteria, but also with regulations regarding the degree to which the university was willing to modify the program for the student (e.g., requirements for the granting of a degree). Several universities (15 percent) stated that the staff was currently attempting to draft a policy for implementation. Criteria for gaining access to services varied widely. Large universities reported requiring specific criteria (e.g., documentation of a disability, physician's report) more often than small universities.

In small universities, the percentage of students with a disability ranged from 0.2 percent to 1.2 percent of the total student enrolment; for large institutions the percentage ranged from a low of .09 percent to a high of 1.0 percent. One small institution did not know if there were any students with special needs in attendance; however, all other institutions, both small and large, reported having a number of students with handicapping conditions as part of their general student population. Overall, more students with disabilities were enrolled in small universities (0.7 percent of the total student population on average) compared to large institutions (0.5 percent).

The number of students by disabling condition is presented in Table 2. In small universities, not all disability groups were represented. In order of decreasing frequency, students with the following types of disabilities were reported: learning disability (reported in 83.3 percent of the small universities), visual impairment (83.3 percent), hearing impairment (75.0 percent), physical impairment (75.0 percent), chronic health problems (58.3 percent), emotional disturbance (41.7 percent), speech and language problems (33.3 percent), and "other" (e.g., drug dependency; head injuries; broken bones) (33.3 percent).

Students with a visual, hearing or physical impairment were found at all large institutions. Students with chronic health impairments or with a learning disability were reported in 80.0 percent of the universities; with emotional problems in 33.3 percent; and with speech and language problems in 20.0 percent of the facilities. Students with "other" conditions were reported in 40.0 percent of the postsecondary institutions.

Overall, students with physical impairments, learning disabilities, visual impairments, chronic health problems and hearing impairments far outnumbered students with emotional disturbance, speech and language problems and "other" or "unknown" conditions.

All large universities had a person or persons in charge of providing services for the disabled; however, only eight of the twelve smaller universities (66.7 percent) had a designated person. In the institutions that did not have a specific person, an administrative staff member (usually located in the Dean of Students' Office or the Student Health Service Department) provided service upon request (i.e., on a limited part-time basis). Information regarding the Coordinators of Services for Students with Disabilities is presented in Table 3.

A coordinator of services for students with disabilities can be characterized as being employed on a full-time basis, having a limited degree of training specifically in the area of working with students with handicapping conditions, and having fewer than five years experience. In small universities, the coordinator most often worked alone; however, in large universities, over 60.0 percent of the offices had additional staff. The number of staff involved in providing programs ranged from one additional person to a maximum of 5.2 additional persons (e.g., secretary, learning disability specialist, interpreter). The number of additional staff was directly related to the number of students enrolled at the university. The average caseload size was 65 students per service provider. Generally the positions) and program(s) were funded by monies available from the general university operating budget and/or a provincial grant.

Table 2
Type of Disability: Total Number of Students Served

	Size of Institution			
	Small (n = 12)	Large (n = 15)	Total (N = 27)	% of Total Population
Type of Disability				
Physical Impairment	107	572	679	30.5
Learning Disability	109	450	559	25.1
Visual Impairment	59	231	290	13.0
Chronic Health Problem	55	193	248	11.2
Hearing Impairment	66	179	245	11.0
Other (e.g., drug abuse; broken bones)	21	84	105	4.7
Emotional Disturbance	12	39	51	2.3
Speech/Language Problem	12	15	27	1.2
Unknown	19	0	19	1.0
Total	460	1763	2223	100.0%

Note: Rank ordered by number of students served in small and large universities combined.

At all institutions, regardless of size, the facilities used by staff providing services for students with disabilities were most often located in the Student Union Building or in an Administration Building. Thirteen percent of the offices were not accessible to students with mobility impairments.

The respondents were asked to describe their primary role as Coordinator of Services for Students with Disabilities. The most common responses, in rank order, were: manager/coordinator/provider of services (reported by 51.8 percent of the respondents), advocate (33.3 percent), liaison between student and faculty/administration (25.9 percent), and facilitator (18.5 percent). Many respondents indicated that their role was a combination of more than one of the above.

Available Services

Several general questions were asked regarding the nature of services provided to students with special needs. The first question addressed the manner in which students became aware of the available services. Six choices were given and participants were asked to rank the various methods from most frequent to least frequent, and to add any additional methods that were specific to the institution the respondent represented. There

Table 3
Information Regarding Coordinator of Services for Students with Disabilities

	Size of Institution	
Coordinator of Services	Small (n = 12)	Large (n = 15)
Type of Position		
Full-time	50.0	66.7
More than 1/2 time	12.5	13.3
Less than 1/2 time	37.5	20.0
Training (%)[a]		
No Formal Training	41.7	46.7
Related Training	16.7	46.7
Formal Coursework	8.3	26.6
Did not Answer	25.0	13.3
Person has a Disability	8.3	13.3
Years Experience		
Mean	3.5	4.8
Standard Deviation	3.2	3.4
Funding of Position/Program (%)		
University Operating Budget	25.0	40.0
Provincial Grant	41.7	26.7
Combination of Above	0.0	33.3
No Designated Funding	33.3	0.0

Note: Information based on designated positions (N = 23).

[a] Several respondents indicated more than one type of training. Percentage totals to more than 100%.

were no significant differences in ranking between small universities and large universities. The rank order for the total sample was as follows:

1. Letters written by the student to the office prior to admission.
2. Referrals from guidance counsellors and/or special education staff of feeder high schools.
3. Direct referral from faculty/advising staff.
4. Written/audio-visual materials available at registration.
5. Direct referral from health services office.
6. Written/audio-visual materials available at health services or residence offices.

Staff at both small and large universities frequently mentioned "word of mouth" (i.e., learning about the service from another student) as being another means by which students gained access to services.

Respondents were asked to rank the problems experienced in trying to provide services to disabled students. Eight potential problem areas were listed. In rank order, from most common to least common, the problems were deemed to be:

1. Lack of funds, staff and resources.
2. Accessibility of campus.
3. Procedures for the identification of students with handicaps.
4. Obtaining adaptive equipment/materials.
5. Obtaining volunteers.
6. Faculty/staff attitudes.
7. Student over-reliance on services.
8. Lack of students necessary for effective lobbying and program development.

Staff at both small and large universities frequently mentioned the lack of stated policies regarding students with disabilities as a problem area. Several respondents commented on the urgent need to develop policies regarding course/degree modifications for students, particularly in light of current and future litigation.

Overall, there were no major differences in the types of problems encountered at small and large universities, except in the areas of accessibility and attitudes of faculty and staff. At small universities, accessibility in general was reported as being less of a problem than at large universities; however, several coordinators at small universities reported specific problems with terrain (e.g., universities being built on steep hills in rural locations), whereas coordinators at large universities cited problems with distance and lack of accessibility for some of the buildings. Large universities are more likely to be found in highly urbanized areas and, consequently, the numerous buildings are spread over many city blocks. Many of the buildings were reported to be old and consequently difficult to modify (e.g., replacing stairs with elevators).

At large institutions, faculty attitudes were reported to be more a problem than at small universities. Poor faculty attitudes was the third most common problem reported at large universities. Willingness of professors to make allowances for students with handicapping conditions (e.g., accepting taped vs. written assignments, giving permission to tape lectures, adhering to rigid deadlines for assignments) was frequently cited as a specific problem.

Respondents were also requested to indicate the services provided by the Coordinator of Services, and his/her staff, to the university community. Four in order of frequency, from most common to different services were listed, and least common, they included:

1. improving the awareness and sensitivity of faculty and staff to the needs of students with disabilities (e.g., providing speakers and arranging workshops).
2. assisting the faculty and administrators to develop equitable and appropriate guidelines with respect to degree and course requirements;
3. working closely with admission officials to ensure that admission procedures do not discriminate against disabled students; and
4. helping faculty and/or staff design and implement specific instructional adaptations.

Even though working closely with faculty and staff in ten-ns of instructional adaptations had the lowest ranking, several respondents indicated that this was an area of particular concern. Several coordinators commented that they had, regrettably, little time to work with individual staff members because of other pressing commitments. This comment was particularly evident for people working on a part-time basis.

A final question dealt with the frequency of contact between the Office for Students with Disabilities and various university personnel. The respondents were asked to indicate the number of phone calls received on average, by various members of the university community. A great deal of variation was evident, both in small and in large universities. The coordinators indicated that the office received between 1-2 calls per year (minimum) and 40-50 calls per month (maximum) from faculty members and 2-3 calls per month (minimum) and 100 calls per month (maximum) from administration staff. Health services staff rarely contacted the office (2-10 calls per month, on average). Similarly, calls from residence staff were limited in number (2-5 calls per month). Several coordinators indicated that the high number of calls from administration staff occurred particularly around exam time and that most of the calls were in regard to allowable modifications in testing (e.g., extra time allowances, oral vs written format).

In terms of actual services provided to students through the Office for the Disabled, forty specific services were listed on the questionnaire, and Coordinators for Students with Disabilities were requested to check all services that were provided by themselves and/or their staff. The services that are offered by at least 50 percent of both small and large institutions are summarized in Table 4. In all cases, large institutions offered more services than small institutions. The most common services were general advising, acting as a liaison to faculty and administration, and arranging for special testing options. Each of these were reported by 88.9 percent of the universities overall.

The number of services provided by small or large institutions, in which at least 50 percent of one type of institution (i.e., small or large) provided the service, is summarized in Table 5. Again, large institutions as a group offered more services than small institutions. In fact, in all cases except one, large institutions offered more services than small institutions. Small universities offered specialized courses specifically to students with disabilities (25.0 percent) more often than large institutions (20.0 percent) (e.g., courses in study skills for learning disabled students).

Table 4

Percentage of Institutions Offering Specific Services to Students with Disabilities (by decreasing frequency)

	Size of Institution	
Type of Service	Small (n = 12)	Large (n = 15)
General advising	75	100
Acting as a liaison to faculty and administration.	75	100
Arranging for special testing options	75	100
Special registration procedures	58	100
Obtaining note takers	58	100
Providing written and/or audio-visual information on available services	67	87
Obtaining readers to tape books	58	87
Acting as a student advocate	67	73
Obtaining tutors	67	73
Acting as a liaison to community services	58	80
Orientation of students to the campus	50	80
Obtaining recorded/brailled and/or large print texts/handouts	58	67
Academic counselling	50	53

Note: Frequency greater than 50% at both small and large institutions

It should be noted that several respondents indicated that some of the services itemized on the questionnaire were provided to the students; however, they were not provided by the Office for Students with Disabilities (e.g., financial-aid counselling, academic counselling). Both small and large postsecondary institutions reported services that were available to students with disabilities by other service providers *on campus* (e.g., job placement service provided by the Employment/Manpower office on campus), or by service providers located *within the community* (e.g., physical or occupational therapy provided by a private/public agency).

Respondents were asked to specify the types of special equipment and materials provided by the Office for Students with Disabilities. In order of frequency from most to least common (for both large and small institutions combined), the equipment available for student use included: tape recorders (66.7 percent), adapted computers (63.0 percent), ampli-

Table 5

Percentage of Institutions Offering Specific Services to Students with Disabilities (by decreasing frequency)

	Size of Institution	
Type of Service	Small (n = 12)	Large (n = 15)
Arranging priority class registration	42	80
Providing special equipment	42	73
Obtaining interpreters	33	80
Providing special parking pen-nits	33	73
Financial-aid counselling	33	67
Obtaining personal assistance attendants	33	67
Vocational/career counselling	33	60
Arranging office and/or carrel space	33	60
Assisting in determining distances between classes/buildings	25	67
Facilitating group rap sessions/ organizations for students	25	60
Providing special materials	33	50

Note: Frequency greater than 50% at large institutions.

fication devices for the deaf (63.0 percent), brailler writers (55.5 percent), typewriters (55.5 percent), and closed circuit television systems (25.9 percent). The materials provided included: carbonized paper (55.5 percent), accessibility maps/tactile maps (48.1 percent), cassette tapes (37.0 percent), and braille paper (29.6 percent). There was no significant difference in the types of materials offered by small and large institutions; however, larger universities provided more technological equipment (e.g., adapted computers, closed circuit television systems).

Accessibility

The final section of the questionnaire was devoted to examining accessibility of the institution. Questions dealt with both the physical terrain and layout of the campus, and the individual buildings on-site. Accessibility in terms of specific handicapping conditions (i.e., physical impairment, hearing impairment, visual impairment) was investigated.

In terms of general terrain and layout of the campus, seventy-three percent of the respondents at large institutions indicated that most of the grounds were manageable for mobility impaired students; whereas fewer respondents at small institutions indicated that the grounds were manageable (63.6 percent). In a few cases, the university provided transportation from building to building, but in most cases (73.3 percent), transportation was provided by community-based companies (i.e., public and/or private taxi or bus companies).

The degree of accessibility for buildings varied greatly at both small and large institutions. In all cases, individual buildings not used as classrooms or residences (e.g., bookstore, library, cafeteria) were described as being accessible more often in large institutions than in small institutions. In many cases large campuses have more than one bookstore, library, or cafeteria (on one or more campuses), and not all of such buildings were declared to be accessible. In most cases, however, the majority were reported to be free of major barriers. All buildings, except the Employment/Manpower office, were reported to be accessible in at least 50 percent of the campuses, regardless of size.

The frequency of modifications available for individuals with physical, hearing, and visual impairments are presented in Tables 6, 7 and 8 respectively. One small university did not complete the section on accessibility; consequently the analysis of the data is based on 26 respondent institutions.

For the mobility impaired student (e.g., a student in a wheelchair), access to the campus was facilitated by the availability of designated parking spaces. However, access to buildings was severely limited, as only a small percentage of buildings had entrance ramps and automatic doors. Once inside the building, the student may also encounter difficulty, as there are very few buildings with low level public conveniences (e.g., low level telephones, drinking fountains).

Accessibility to the campus for the student with a hearing impairment was also limited, as only one institution had a telecommunication device for the deaf (TDD) connected to the main university switchboard, and only half of the universities had a TDD connected to the Office of the Coordinator of Services for Students with Disabilities. Similarly only a few lecture halls, auditoriums and gymnasiums had installed amplification systems for the hearing handicapped. However, it should be noted that several respondents stated that such modifications/equipment were not necessary, since students with a hearing impairment had never enrolled in their respective institutions. Others reported that such equipment was not necessary, since students provided their own (i.e., personal amplification systems).

Accessibility for the student with a visual impairment was also limited in most of the universities. Very few signs, doors or elevators were marked in braille; however, many of the institutions did attempt to provide specialized equipment required by the student to attend courses. It should be noted, though that several respondents stated that such modifications/equipment were not necessary, since students with a visual impairment had never enrolled in their respective institutions.

Even though older buildings are difficult to modify and alterations are extremely costly, all respondents mentioned that as funds were being made available, alterations were being made. Several coordinators indicated that it has been the presence of a disabled

Table 6

Facilities Available to Students with a Mobility Impairment

	Size of Institution		
Facility	Small (n = 11)	Large (n = 15)	Total (N = 26)
Building Entrance Ramps:			
1. Classroom/Lab/Studio Buildings			
all have ramps	3	3	23.1
ramps to half or more	4	6	38.5
ramps to less than half	4	6	38.5
none has ramps	0	0	0.0
2. Residences			
all have ramps	1	5	23.1
ramps/half or more		6	30.8
ramps/fewer than half	4	3	27.0
none has ramps	2	1	11.5
not applicable	1	0	3.8
Handrails: (all buildings)			
all stairs have handrails	5	6	42.3
handrails/half or more	4	5	34.6
handrails/fewer than half	2	3	19.2
none has handrails	0	0	0.0
Automatic Doors: (all buildings)			
all doors are automatic	0	0	00.0
auto doors/half or more	0	0	00.0
auto doors/fewer than half	5	11	61.5
none has automatic doors	5	3	30.8
Elevators: (Multi-story building)			
all have elevators	2	4	23.1
elevators/half or more	5	9	53.8
elevators/fewer than half	4	1	19.2
none has elevators	1	0	3.8
Curbing:			
all curbs are sloping	4	4	30.8
cut curbs/half or more	2	10	46.1
cut curbs/fewer than half	4	0	15.4
none has sloping curbs	1	0	3.8
Low Level Public Conveniences: (all buildings)			
1. Telephones:			
all have low phones	0	7	15.4
low phones/half or more	5	7	46.1
low phone/fewer than half	2	4	23.1
none has low phones	4	0	15.4

Table 6 (continued)

	Size of Institution		
Facility	Small (n = 11)	Large (n = 15)	Total (N = 26)
2. Drinking Fountains:			
all have low fountains	0	0	0.0
fountains/half or more	1	5	23.1
fountains/fewer than half	3	9	46.1
none has low fountains	7	0	27.0
3. Low Control Panels for Elevators:			
all have low panels	3	1	15.4
low panels/half or more	3	3	23.1
low panels/fewer than half	4	8	46.1
none has low panels	1	2	11.5
Modified Washrooms: (all buildings)			
all have modified washrooms	2	6	30.8
washrooms/half or more	4	5	34.6
washrooms/fewer than half	5	4	34.6
none has modified washrooms	0	0	0.0
Seating for the Disabled: (auditoriums/gymnasiums)			
all have reserved seating	1	2	11.5
seating/half or more	4	4	30.8
seating/fewer than half	0	7	27.0
none have reserved seats	5	1	23.1
Designated Parking: (campus grounds)			
all buildings have parking	6	6	46.1
parking/half or more	5	4	34.6
parking/fewer than half	0	2	7.7
no special parking	0	1	3.8
Emergency Treatment by Designated Persons (all buildings)			
person/all buildings	2	2	15.4
person/some buildings	2	1	11.5
no designated person	1	1	7.7
health service on campus	6	10	61.5
city-wide 911 service available	0	1	3.8

Note: Some respondents did not answer all the questions related to accessibility. One small university omitted this section of the survey. Percentages do not always total to 100%.

Table 7
Facilities Accessible to Students with a Hearing Impairment

Facility	Size of Institution Small (n = 11)	Large (n = 15)	Total (N = 26)
Telecommunication Devices for the Deaf (TDD):			
at main switchboard	0	1	3.8
in Office for the Disabled	4	9	50.0
other buildings			
TDD /half or more	0	1	3.8
TDD/fewer than half	2	9	42.3
none has TDDs	9	3	46.1
Amplification Systems: (lecture hall/auditorium/gymnasium)			
all have systems	0	1	3.8
systems/half or more	3	0	11.5
systems/fewer than half	5	3	30.8
none has amplification systems	3	11	53.8
students use personal systems	0	6	23.1

Note: Some respondents did not answer all the questions related to accessibility. One small university omitted this section of the survey. Percentages do not always total to 100%

student on campus that has forced building supervisors to modify existing buildings; but others indicated that local building codes and Human Rights legislation were necessitating the change-over.[4] Almost all respondents reported that if a particular building were inaccessible, attempts were made to relocate the class to an accessible building. Several respondents indicated that the Administration of the university was very sympathetic to the special needs student, but that the town planners in the towns/cities in which the university was located were negligent in providing adequate services (e.g. city-wide transportation).

DISCUSSION

Because of the paucity of information on services for students with disabilities in postsecondary institutions in Canada, it is difficult to interpret the data obtained. However, the responses seem to indicate that both small and large institutions are attempting to accommodate special needs students. Eighty-five percent of responding institutions have a designated person to assist the student with a disabling condition, and at fourteen universities (51.8 percent) the person works on a full-time basis. A wide variety of services is available to the student and to the university community, the most common being general advising. Accessibility continues to be a problem at both small and large universities, and wide variation is found both between small and large institutions and for different disability groups (i.e., mobility impaired, hearing impaired, and visually impaired).

Table 8
Facilities Accessible to Students with a Hearing Impairment

	Size of Institution		
Facility	Small	Large	Total
Signs/Door Markings: (all buildings)			
all in braille/large print	1	0	3.8
signs/half or more	1	1	7.7
signs/fewer than half	2	6	30.8
none in braille/large print	7	8	57.7
Elevator Controls in Braille: (all multi-story buildings)			
all in braille/large print	1	2	11.5
controls/half or more	1	2	11.5
controls/fewer than half	7	5	46.1
none in braille/large print	2	5	27.0
Auditory Output in Elevators: (all multi-story buildings)			
all have auditory output	0	0	0.0
output/half or more	0	0	0.0
output/fewer than half	2	3	19.2
none has auditory output	9	9	69.2
Specialized Equipment available on Campus			
Closed Circuit TV System(s)	4	8	46.1
Optacon(s)	1	2	11.5
Kurtzweil Reader(s)	2	8	38.5
Adapted Computer(s)	3	13	61.5

Note: Some respondents did not answer all the questions related to accessibility. One small university omitted this section of the survey. Percentages do not always total to 100%.

The findings of the present study are very similar to those reported by Stilwell et al. (1983) in their examination of services available to students with disabling conditions in the state of Kentucky. The authors reported that "institutions of higher education . . . have responded and adapted to handicapped students, but the degree of adaptation has been uneven" (p. 343). Marion and Iovacchini (1983) reported that "basic services" are available in most institutions in the United States; however, they added that "it is likely that most administrators and governing boards will choose to provide only the minimum services required by law" (p. 135). One should be cautious in comparing results obtained in Canada to those obtained in the United States, for American legislation (specifically the *Rehabilitation Act* of 1973, Section 504) requires federally funded institutions to have "programs and services accessible to handicapped individuals" (Marion & Iovacchini, 1983, p. 131). Similar requirements are not federally mandated in Canada, and consequently the finding that both small and large universities are attempting to make institutions accessible for the student with a handicapping condition (i.e., in terms of reducing policy, social and architectural barriers) is particularly encouraging.

Overall, the difference between large and small universities in terms of variability of services and the number of institutions offering such services is not excessive. Large institutions in Canada offer more services than small institutions, and have more support service workers employed than small universities. However, the ratio of types of services to number of students and ratio of number of employees to total enrolment are comparable. Nonetheless, there are specific areas of concern at both small and large institutions.

Small universities appear to be caught in a particular dilemma: more students with disabilities attend small universities than large institutions (0.7 percent i,s 0.5 percent of the total population), however, there are fewer staff to provide the services and fewer types of services available overall. In some small institutions there are no designated funds allocated to serving students with special learning needs. Lack of funds, staff and resources was reported to be the greatest problem in small universities.

It is not known why more handicapped students chose a smaller institution; however, this finding is similar to that reported by Sergent et al. (1987). It is reasonable to surmise that there is a variety of factors that a particular student may consider (e.g., smaller class size, increased personal contact with instructors) in making a choice (Bursuck, Rose, Cowen & Azmi Yahaya, 1989).

It was not surprising to discover that large institutions provide a wider range of services than do small institutions, particularly considering the fact that the additional staff members employed in the Office of Services for Students with Disabilities might have a particular area of expertise or a specific talent to offer (e.g., staff member trained to do assessments, a staff member fluent in sign language). However, large institutions are also caught in a dilemma: more services are provided to students, but at the same time Coordinators of Services for Students with Disabilities reported more problems in the area of accessibility and in terms of faculty and staff attitudes. For the student with a physical impairment, travel between buildings in a short period of time between classes may be virtually impossible, particularly in inclement weather. One university reported having over 100 buildings, spread over a large urban area. Negative faculty attitudes towards students with handicapping conditions were reported to be more prevalent at large universities than at small. Faculty at larger institutions often have less personal contact with students with a disability (Fichten, 1988); and lack of contact has been shown to affect attitudes (Fonosch & Schwab, 1981). The results of the present study indicate that Coordinators of Services for Students with Disabilities are attempting to work with faculty members in an effort to improve the awareness and sensitivity of staff to the needs of the disabled. However, reported time constraints often prevent working on an individual basis with faculty members.

The finding that persons with a physical impairment outnumbered all other types of individuals with other handicapping condition was similar to that found in the HALS survey (Statistics Canada, 1990a) in which, for the 15-64 age bracket, individuals with mobility problems exceeded all other groups (59.3 percent of total group).[5] A similar finding was also reported in the United States (Sergent et al., 1987). However, of particular concern is the need to accommodate the learning disabled student at the postsecondary level. The data from the present study indicate that the number of learning disabled students attending postsecondary programs is second only to the number of physically impaired students[6] (25.15 percent vs. 30.54 percent of the population of known students with disabling conditions). A similar finding has also been reported in the United States by Marion and Iovacchini (1983) and by Sergent et al. (1987). It is widely recognized that the population of learning disabled students has and continues to increase dramatically (cf., McGuire & O'Donnell, 1989; Nelson & Lignugaris/Kraft, 1989; Sergent et al., 1987; Wilchesky, 1986); however, studies have shown that faculty members have limited knowledge about learning disabilities (Aksamit, Morris & Leuenberger, 1987) and may have misconceptions about this particular disability area (McGuire & O'Donnell, 1989). Faculty members may not recognize the need for accommodation because of the lack of "visibility" of the learning disability (Aksamit et al., 1987, Wilchesky, 1986). Both small and large universities across Canada reported providing services to learning disabled students; however, the type of services (e.g., obtaining tutors, obtaining readers to tape books, obtaining note takers) and availability of such services varied widely.

Both small and large universities reported difficulty in identifying students with handicapping conditions. This problem was reported slightly more often by staff at large universities than at small institutions. Several coordinators raised the issue of invasion of privacy (i.e., in requesting information about the presence of a disabling condition at the time of application), particularly in light of the recently enacted Canadian Charter of Rights and Freedoms and existing provincial Human Rights legislation. A few postsecondary institutions reported that they do *not* rely solely on self-report upon arrival on campus, but rather *require* students to provide detailed information regarding the nature of the disability and the anticipated services that the student may require (e.g., large print books) immediately *upon acceptance*. Several universities reported having developed specific forms to obtain such information. However, this procedure does not appear to be a common practice across Canada.

One method of identifying students is by means of referral from feeder high schools; however, it should be noted that many students (with or without disabilities) do not enter postsecondary programs immediately after completing their high school education. Nonetheless, for those that do, Fairweather and Shaver (1990) stressed the need to improve linkages between secondary and postsecondary educational institutions. In comparing the secondary school environment to that of postsecondary education, the authors suggested that the problem is one of moving from a "protected environment" (in which, by law, appropriate services must be provided) to one in which the "burden is on the student to notify the postsecondary institution about the nature of his or her disability and the need for assistance" (p. 334). Because of the problems in identifying students with disabling conditions, Fairweather and

Shaver stated that "even if the institution can provide the necessary services, the student may drop out before the student's needs for such services are known" (p. 334).

Coordinators reported that most students become aware of services by letters written prior to admission. However, students may not be aware of *whom* to write to or *where* the person might be located. In the present study, three questionnaires were returned to the researcher marked "addressee unknown". Each of the universities had, in fact, a person designated to provide services to special needs students, but the individual did not go by the title "Coordinator of Services for Students with Disabilities". When the letters were sent, in a subsequent mailing to the Dean of Students' Office, responses were received.

Of the 40 services listed on the questionnaire, the majority (60 percent) were available through the Office for Students with Disabilities and many of the remaining services were available through other offices on campus, often in conjunction with the Office for Students with Disabilities. Availability of services, equipment and materials for use by students in Canada closely resembled those available to American students (cf., Marion & Iovacchini, 1983; Sergent et al., 1987).

The provision of a list of services (see Table 4) offered by at least fifty percent of the universities, regardless of size, may be of assistance to staff working with students with disabilities in evaluating the current level of service at their respective institution and in identifying services not provided that could be made available in the future. Some services were reported to be rarely offered (i.e., by fewer than 25 percent of the universities combined). They included: job placement service (22 percent); wheelchair loan/repair service (20 percent); repair of equipment (18.5 percent); homebound service for students unable to attend classes as a result of illness (16 percent); and 24-hour emergency service (8 percent). Many of these services would be available in the community, from either private agencies or governmental agencies (e.g., job placement service available through the Employment/ Manpower Office), and should not, in most cases, be considered under the mandate of the university.

RECOMMENDATIONS

The following recommendations are derived from the findings of the present study, the comments offered and the materials submitted by the respondents to the survey, and a review of the related literature on postsecondary education of students with disabling conditions. The recommendations apply to both small and large universities, unless specified.

1. Universities must ensure that they develop fair and equitable policies regarding the admission of students with disabilities.[7] Students with special needs may have graduated from secondary schools with non-standard high school leaving certificates (e.g., sign language as a substitute for a second language, mobility rather than physical education) that may hinder the usual admission process. Each application should be considered as being unique, and should be reviewed by a special

committee. Universities must address the issue of sensory and physical ability and course pursuit (e.g., Should a student with a visual impairment be able to pursue a career in medicine? a hearing-impaired student a career in law? a wheelchair user a career in nursing?) (Fichten, 1988).

2. Applications from students with a disability should be vetted by an admissions committee, consisting of:
    - Director of Admissions,
    - Coordinator of Services for Students with Disabilities
    - Appropriate Dean or Chair of subject area
    - Faculty member with expertise in the specific disability area (e.g., from the Department of Special Education).
3. Universities must ensure that students with disabling conditions are identified early, before the student encounters difficulty and withdraws. Fairweather and Shaver (1990) suggested that lack of awareness of available services *before* admission may adversely affect "the likelihood of application to and success in college" (p. 334). Letters that are written by students prior to admission to the university must be received by the Office of Services for Students with Disabilities, regardless of the name under which it is known. All students that are accepted by the institution should be sent written materials on services for students with disabilities (including information on criteria for service) and should be required to provide detailed information regarding their unique needs (e.g., wheelchair accessible buildings) prior to arrival on campus.
4. Strong linkages between secondary and postsecondary educational institutions must be developed (Fairweather & Shaver, 1990). Universities should distribute materials related to the types of services available, and the extent to which the university is accessible, to high schools, public and private agencies serving students with special needs, and libraries within their respective province, thus encouraging students with disabling conditions to apply. Several directories are currently available that provide limited information regarding accessibility of specific institutions in both Canada and the United States.[8]
5. All universities should ensure that there is a designated person within the university to assist students with special needs. Fonosch and Schwab (1981) reported that faculty members at a university with an office providing services to students with disabilities had a more positive attitude than their counterparts at universities where no such services existed. In universities where the enrolment of special needs students is limited, the person would probably not be needed on a full-time basis. The findings of the present study indicated that a ratio of 1 service provider to 65 special needs students is the average in Canada.

6. In small universities where there is an insufficient number of students to warrant employment of a specific staff member to assist special students, special education faculty (and their students) could be involved in providing assistance (Salend, Salend & Yanok, 1985). Activities could include advising students, promoting positive campus attitudes and assisting in learning centres. In both small and large universities, such an arrangement would, in effect, enhance the number of people available to assist special needs students.

7. Administrative staff of the universities must ensure that there is sufficient funding to hire the necessary staff and to operate the programs that provide services to students with disabilities. If faculty members are involved in the provision of services (see Recommendation #6), release time should be provided. Lack of funds, staff and resources was cited as the greatest problem area in providing services to students in need.

8. Universities should attempt to provide the various services required by the students with special learning needs to pursue a postsecondary education. In some cases, the specialized services may already be provided by agencies in the community (e.g., wheelchair loan), and in such cases the staff should not attempt to duplicate those available, but instead should be knowledgeable about such services and ensure students obtain the necessary referral. The services listed in Tables 4 and 5 may assist coordinators in determining what services should be provided at their respective institutions

9. On-going professional development opportunities must be made available to staff in the Office for Students with Disabilities. The majority of the respondents in the present study indicated that they had limited training in working with individuals with special needs (over 40 percent reported no formal training); however, several indicated that they taken isolated courses, attended conferences on the needs of students with handicapping conditions, and had read widely on the topic. The findings related to training in the present study differ significantly from those found by Kelly (1984) in her research on training of collegiate coordinators of services for students with disabilities in the United States. In examining the training of 409 service providers, Kelly found that 81.1 percent of those surveyed had either a Master's or a Doctoral degree and that 72.0 percent had taken one or more specialized courses in working with special needs students.

10. Universities must examine current policies regarding acceptable accommodations (e.g., degree and course requirement modifications) for students with learning problems.[9] Some universities have policies in effect; however, it would seem from the findings of the present study that the majority do not. Some universities appear to allow specific exemptions for learning disabled students (e.g., waving language requirements for

graduation), while others have not addressed the issue (Canadian Press, 1990). Universities must ensure that the policy guidelines are included in the calendar and faculty handbook of the institution.

11. Faculty and staff must become more sensitive to the needs of students with handicapping conditions. Research has shown that staff who are better informed have a more positive attitude towards those with special learning needs (Aksamit et al., 1987). Faculty members newly appointed to the university should be required to attend a seminar on the needs of students with disabilities. Current staff who have not had such training should also be required to participate. Coordinators of Services for Students with Disabilities, or their staff, should regularly contact faculty members who have special needs students in their classes to discuss appropriate modifications that may be required to accommodate the students (cf., Hill, 1991). All faculty and staff, particularly those working in the residences and health service office, should be cognizant of available services and should be encouraged to refer students encountering difficulty.

12. As funds become available, renovations should be carried out to ensure buildings are totally accessible to students with varying types of disabilities (e.g., mobility impaired, hearing impaired, visually impaired). Universities should actively search for funds if none is available through the usual channels. All buildings that are frequented by students with handicapping conditions on a regular basis should be made accessible immediately (e.g., bookstores, libraries, cafeterias, residence halls). In particular, the building in which the Office for Students with Disabilities is located must be accessible to all students.

13. Universities, both small and large, should consider offering specialized courses for students with disabling conditions (e.g., college survival skills, career decision-making). Torres (1984) reported that a survival skills course offered at Kingsborough Community College in Brooklyn, New York resulted in increased student retention, enhanced student familiarity with policies and procedures, and improved academic progress.

14. Even though universities should attempt to assist the special needs student pursue a university career, the staff should be cautioned about becoming over-solicitous. Faculty and staff should remember that "most handicapped students do not view their disability as a 'great tragedy' that has befallen them. Rather, they see it as a fact of life, an inconvenience, a cause of frustration" (Penn & Dudley, 1980, p. 356).

SUMMARY

Wilchesky (1986), in examining some of the critical issues which need to be resolved in serving students with disabilities attending postsecondary institutions, stated that the most crucial question, at that time, was: "To *what extent* will society *demand* [italics added] that colleges and universities provide special education services for students with learning disabilities and/or other handicapping conditions?", particularly since "contemporary college instruction is not geared toward the individual student, but at the transmission of a delineated amount of information in a specific area of discipline to large numbers of students" (McCloughlin, 1982, cited in Wilchesky, 1986, p.8). With an increase in enrolment of students with disabilities, society must demand such services now.

No two students have the same needs. The services required by a student with a visual impairment differs from those called for by a student with a hearing impairment. The requirements of a mobility impaired student do not resemble the requirements of those with a learning disability. The purpose of the present study was to examine the types of services available to students with handicapping conditions pursuing a postsecondary education, and the extent to which these services are available in facilities that varied by size, across Canada. Even though a wide variation was evident, it would appear that even universities with small enrolments are attempting to provide basic services necessary to accommodate students with disabling conditions and attempting to make campus buildings accessible. Future research is needed to examine the types of services and the extent to which services are available at other postsecondary institutions (e.g., community colleges, trade schools) in Canada, and to investigate whether or not the consumers of such services, the students with special learning needs, are satisfied with the assistance offered to them in their pursuit of a postsecondary education.

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Notes

[1] The "non-traditional" student population also includes the middle-aged and elderly college student with concomitant physical disabilities (Fichten, 1988; Kelly, 1984), the student with a specific learning disability (Aksamit, Morris & Leuenberger, 1987) and the disabled veteran (Stilwell & Schulker, 1973).

[2] The HAL Survey used the World Health Organization's definition of disability, which is: "any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being." The nature of the disability was categorized into one of the following groupings: mobility, agility, seeing, hearing, speaking, "other", and "nature not specified."

[3] Size of universities varies widely across Canada. Statistics Canada (1990b) reported that approximately one-third of the institutions had 10,000 full-time students or more and that the largest had in excess of 30,000 full-time students. In one study similar to the present investigation, conducted in the United States, both the range of services and the number of institutions offering these services were found to be comparable in small institutions (total student body numbering fewer than 10,000) and in large institutions (total student body numbering 10,000 or more) (Sergent et al., 1987); however, it is unknown at the present time whether similar equality exists in Canadian institutions.

[4] Under Canadian law, the regulations that mandate accessibility of buildings is a provincial responsibility. "Building codes generally apply to new construction and have traditionally been concerned with fire safety, structural sufficiency and health of the building's occupants. More recent codes have dealt with accessibility for handicapped persons and with energy conservation" (Canadian Encyclopedia, 1988, p. 296).

[5] In the 15-64 age group the rank order for reporting on the nature of the disability was: mobility (59.3%), agility (51.9%), hearing (23.6%), vision (11.6%) and speaking (6.1 %). The remaining included "other" (28.0%) and "nature not specified" (8.4%). It should be noted that a person may have reported more than one limitation.

[6] The exact number of learning disabled individuals in Canada is unknown. In the HAL Survey (Statistics Canada, 1990a), individuals with learning disabilities were classified under

"other". However, this grouping also included individuals with emotional or psychiatric disability, and those that are developmentally delayed (i.e., mentally retarded).

[7] Scott (1990) proposed a set of guidelines that can be used to assist faculty and staff in determining whether or not an "otherwise qualified" student with a disability should be accepted into a postsecondary program. The term "otherwise qualified" student comes from Section 504 of the *Rehabilitation Act* of 1973 in the United States of America. The act states: "No otherwise qualified handicapped individual shall, solely by reason of his handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance [e.g., postsecondary institutions receiving federal assistance in the form of financial aid to students]." University staff attempting to develop equitable admission policies will benefit from an examination of this article.

[8] The National Educational Association of Disabled Students [NEADS, 4th Level Unicentre, Carleton University, Ottawa, ONT K15 5B6, Canada] has recently compiled a detailed directory that provides information on services and levels of accessibility in colleges and universities in Canada. McGeough, Jungjohan and Thomas (1983) provides information of selected college facilities in the United States and Canada.

[9] Wilchesky (1986) addressed the issue of "reasonable accommodations". He cited a study by Goodin conducted in 1985 in which 586 professionals in the area of postsecondary education for students with special needs determined that the following accommodations were acceptable: permission to respond orally to essay exams, dictate test answers to proctors, take a proctored exam in another room, take extra time to complete an exam, tape record lectures. The following adjustments were viewed more unfavorably: exemption from academic probation and dismissal policies, allowing proofreaders to substitute higher level vocabulary in a draft, allowing proofreaders to reconstruct the draft. Wilchesky concluded, by saying: "In any case, the issue of reasonable accommodations must be addressed in order to ensure . . . that both the integrity of the degree-granting institution and the learning disabled student remain intact" (p. 8). Similarly, Nelson, Dodd and Smith (1990) examined faculty willingness to provide students with learning disabilities instructional, assignment, examination and special assistance accommodations among faculty in the colleges of Education, Business and Arts and Sciences. University staff attempting to develop equitable policies regarding acceptable accommodations will benefit from an examination of these articles.

The Growth of the Canadian Education System: An Analysis of Transition Probabilities*

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ABSTRACT

Canada is shown, in a comparison with 23 other industrialized nations, to have distinctively, low rates of school attendance from age seventeen onwards. Closely comparable data from a Canadian and an American national survey make a detailed comparison of the two nations possible. There has been a strong trend towards virtually, universal completion of grade and high school in the U.S. Canada has Followed this trend at the lower levels, but retains a low rate of secondary school completion. Rates of attending postsecondary and postgraduate training short, little trend in either country. The "transition probability" analysis, in which each level of schooling is examined separately, is further pursued in an assessment of the effects of social background factors, called "ascription" upon progress through the system. Background factors are found to to have generally, weaker effects upon higher levels of education in Canada, as in the U.S. They are especially, weak at the crucial point, the completion of high school, showing that social background is not a significant element in the creation of Canada's high rates of dropping out of high school. The overall effects of background seem higher in Canada, and especially, so for females.

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RÉSUMÉ

Si l'on compare le Canada à vingt-trois autres pails industrialisés, on remarque que celui-ci a un taux particulièrement bas de jeunes qui fréquentent l'école apres dix-sept ans. On a pu comparer de façon précise la situation du Canada et celle des États-Unis, grâce à des sondages organisés à l'échelle nationale dans les deux pays, sondages dont les données étaient très semblables. On a ainsi pu constater qu'aux États-Unis, il semblait de plus en plus fréquent que tous les élèves, ou presque, finissent l'école secondaire tandis qu'au Canada, cette tendance n'apparaissait qu'à un niveau inférieur, le nombre d'élèves capables d'aller jusqu'au bout de leurs études secondaires restant très faible. Quant à l'inscription dans des établissements postsecondaires ou dans des centres professionnels, elle ne semble indiquer aucune tendance particulière dans les deux pays. L'analyse de «transition-probabilité», pour laquelle on a considéré chaque niveau d'enseignement séparément, est completée ici par une évaluation des effets du milieu social, ou «ascription », sur la progression dans le système. Les facteurs sociaux semblent avoir des effets moindres dans les classes les plus élevées de l'école secondaire, au Canada comme aux États-Unis. Or, s'ils sont particulièrement faibles à ce moment crucial, enfin d'études secondaires, cela montre que le milieu social n'est pas un facteur qui contribue à détermitier de façon significative le taux élevé d'abandon dans les écoles secondaires du Canada. Malgré tout, le milieu semble jouer un rôle plus marqué au Canada qu'aux États-Unis, surtout pour les femmes.

INTRODUCTION

A striking difference between Canadian and American society is the comparatively low level of schooling in the former. Canadian under-education preoccupied both John Porter, in *The Vertical Mosaic* (1965), and S.M. Lipset's widely noted comparison of the English-speaking democracies (1963). One explanation would be that ours is a highly ascriptive society. "Ascription" in sociological studies of education refers to the extent to which social background traits such as socioeconomic status or ethnicity determine the level, or years, of education a person attains. That ascription in postsecondary educational attainment was especially high in Canada and was a dominant theme of 1970s research (Anisef, 1977; Breton, 1972; George & Kim, 1971; Gilbert & McRoberts, 1977; MacKinnon & Anisef, 1979; Porter, Blishen, & Porter, 1982; Porter, Blishen, & Porter, 1973).

Recent results by Guppy et al. (1984) and by Wanner (1986), however, have reoriented explanation of Canadian under-education. While all agree with earlier researchers that ascription exists within Canada, Wanner, analysing equivalent surveys from Canada and the U.S., found little evidence that inequalities in access to American education were any less than in Canada. Linkage between total years of schooling and social background was roughly comparable across the two societies. Wanner also did level by level analysis, following a style developed by Mare (1979, 1981). This detailed analysis, treating the acquisition of each level of education as a separate statistical problem, revealed essential

Canada-U.S. equivalence in ascription in the transition from high school attendance to completed high school, and from completed high school to postsecondary. It seemed that either retention rates tend across all socio-demographic groups to be lower in Canada or that ascription occurs in different form, and more intensively prior to the late secondary and the postsecondary levels, in Canada than in the U.S.

We endeavour in this paper to build upon the work by Wanner and by Guppy et al. in two respects. First, ascription is examined from the elementary level on. Second, our analysis proceeds from the conviction that in the Canadian context "social background" should be defined broadly, to include gender, ethnic, regional and religious inequalities. Wanner, in order to maintain explicit comparison with the U.S. data, limited attention to males and to five social background variables: father's education and occupation, farm background, broken family, and number of siblings. Guppy et al. focused upon father's occupation alone. While our analysis retains the U.S. as a comparative yardstick, the comparison necessarily becomes loose. Indeed, we maintain that conceptually no more than broad comparison is possible in such work. Not only are the two education systems structured somewhat differently, as Warmer nicely described (1986), but variables such as "broken family" entail dissimilar meanings. In the U.S. a code for broken family largely reflects the weaker family structure among blacks, while in Canada early departures from the home by a child account for much of the family dislocation (Boyd et al., 1985:207).

From the recent style in educational research, it might be thought more fitting to write of American over-education than Canadian under-education. The tradition of Berg (1970), Boudon (1974), and Collins (1979) insists that high U.S. rates of formal education reflect excessive credentialism. Even granting that controversial (e.g., Burris, 1983; Rubinson, 1986) thesis, however, Canadian education remains a striking international anomaly.

The anomaly is demonstrated in Table 1, a descriptive tabulation comparing full-time enrolment rates for ages 15-20 in 24 industrialized societies. Entered in the table is mean enrolment for the countries, together with Canadian and U.S. figures adjusted for level of economic development, indexed by per capita national income. Equations for estimating enrolment from national income were computed for each level. The prediction capitalizes on the linkage between economic development and level of education (Carroll, 1981; Walters & Rubinson, 1983), without pre-judging cause and effect. As notes to Table 1 show, the relationship is strong, but diminishes with ascending level of education, as expected from Collins (1971). The table gives enrolment rates adjusted for economic development. (Statistical details appear at the bottom of the table.) The comparison year, 1970, is appropriate since the survey data used below date from the early 1970s.

Results of the adjustment reveal that Canada compares favourably with the other industrial countries until ages 18-20 — the postsecondary population, in other words. For the eighteens, Canadian educational retention becomes about typical (although one should discount for the stronger apprenticeship tradition in Europe), but for the 19 and especially 20 year olds, Canadian enrolments fall well below the cross-national norm. Educational retention among Canadian 15 and 16 year olds actually exceeds the U.S. average, but from

Table 1

Enrolment Rates Adjusted for Level of Economic Development: Canada and U.S.A., 1970

		Percent Enroled	
Age Level	Mean for 24 industrial societies*	Canada (adjusted)	U.S.A. (adjusted)
15	72.5	92.9	84.6
16	56.8	83.2	80.5
17	44.5	68.1	71.4
18	29.3	32.9	37.7
19	21.3	16.5	23.4
20	16.8	9.8	17.0

*Source: *The Educational Situation in OECD Countries*. Paris: Organization for Economic Co-operation and Development, 1974, pp. 23-24.

Notes on adjustment: Source for per capita national income is *Statistical Yearbook*, Department of Economic and Social Affairs, United Nations, 1973 and other years. The regression equations linking enrolment and national income are, with Y = logit transformation of predicted enrolment, and X = per capita national income, 1970 dollars equivalent:

Age 15: $Y = .000514X - .425$ R square = .653
16 $Y = .000300X - .453$ = .459
17 $Y = .000221X - .572$ = .309
18 $Y = .000124X - .719$ = .282
19 $Y = .000098X - .876$ = .262
20 $Y = .000097X - 1.024$ = .256

Adjusted = Grand mean at each level – regression residual

age 17 on the familiar pattern of higher retention in the U.S. appears. The key point of the table is that once into the post-secondary phase of formal education, the U.S. becomes the more "typical" society, with Canada the anomaly.

As already implied above, our work derives conceptually from Mare's (1979, 1981) analysis of U.S. education. Mare's essential point was that educational attainment should be analysed level by level, and generational cohort by generational cohort, rather than simply in the global sense of years completed. For Canada, his work is important for: (i) stressing that educational rates in a contemporary cross-section of a population average out potentially massive historical change in educational enrolment, (ii) showing that the retention rates are also cumulative, in the sense that one level of education typically requires successful completion of an earlier one. Starting from a lower base, Canada industrialized at an even faster pace than the U.S., during the 20th century (Boyd et al., 1985). A plausible hypothesis would be that low Canadian educational retention among

19 and 20 year olds is an historical legacy that will fade. And from Mare's second point, the notion must be entertained that the low postsecondary enrolments derive not merely from the barriers of social background (as defined in the broad sense suggested above) or disinclination causing Canadians with postsecondary education to forsake further studies, but from checks that early in the educational system pare down the pool of eligible 19 and 20 year olds.

DATA

The data for this analysis come partially from the Canadian censuses of 1976 and 1981 but principally from the Canadian Mobility Study, hereafter CMS (for details, see Boyd et al. 1981, 1985). This data set is sufficiently large to generate estimates of transition probabilities across age cohorts. ("Transition probabilities" is a term from Mare referring to the probability that people who have completed one level of education will enter the next higher level.) The CMS is also valuable since it was designed to be a Canadian equivalent to the Blau and Duncan (1967) and Hauser and Featherman (1976) studies in the U.S. and these are the data sets used in the U.S. research. The CMS survey cannot provide recent estimates of educational achievement, for several reasons. It is now somewhat dated, having been conducted in 1973; the educational experiences of the recent cohorts in such a survey are not complete (Hauser & Featherman, 1976), and there is evidence ' that for the most recent cohorts in Canada long-standing patterns of achievement have been somewhat disrupted (see Goyder, 1980; Harvey & Chamer, 1975). In addition, the Canadian survey purposively omitted all cases of young adults still in school. These limitations have little bearing upon our analysis which focuses upon the long term trends revealed particularly by the cohorts born between 1907 and 1946.

The comparison of the Canadian results with those from the U.S. can be close but not perfect. The questions soliciting educational level in the two countries are almost identical when it comes to measuring early years of schooling but the studies differ in their measurement of postsecondary education. The Canadian research probed into the kinds of postsecondary education undertaken while the U.S. study measured only "years in college" leaving undefined what is meant by college. Also the U.S. study contains no direct information on females.

Basic Findings: Transition Probability Tables

Table 2 presents transition probabilities across the levels of schooling, for males and females, divided into five year cohorts according to year of birth. The logic of the table is straightforward, with one exception. The entry in the top left cell (.85 for males) indicates that of all the males captured in the survey and born between 1907 and 1951 inclusive, 85 percent reported they had at least completed primary school (i.e., grade 8). But from this point on down in the table each probability is based on the subset which successfully survived the earlier transition. Thus the next entry for males (.83) indicates

Table 2

Probabilities of Proceeding to the Next Level of Schooling by Cohort (Canadian Mobility Study data)

			Cohorts born								
		Total	1907-11	1912-16	1917-21	1922-26	1927-31	1932-36	1937-41	1942-46	1947-51
Complete Primary	M	.85	.66	.75	.77	.80	.83	.86	.90	.94	.96
	F	.87	.73	.78	.82	.83	.84	.87	.91	.94	.96
Some High School	M	.83	.66	.72	.74	.73	.80	.81	.86	.92	.95
	F	.83	.67	.73	.76	.77	.76	.82	.85	.92	.95
Complete High School	M	.68	.62	.63	.63	.64	.64	.64	.71	.73	.73
	F	.69	.69	.64	.64	.65	.66	.63	.68	.74	.76
Post-secondary	M	.70	.70	.65	.63	.71	.72	.74	.75	.74	.66
	F	.69	.69	.69	.67	.68	.70	.72	.71	.73	.64
Some university	M	.49	.47	.46	.49	.47	.49	.52	.52	.54	.46
	F	.29	.28	.29	.24	.25	.26	.26	.28	.30	.33
Complete university	M	.56	.50	.41	.53	.55	.63	.60	.64	.59	.47
	F	.45	.38	.35	.37	.44	.40	.46	.49	.49	.46
Postgrad	M	.47	.57	.56	.49	.52	.56	.63	.50	.45	.19
	F	.27	.30	.40	.29	.39	.43	.33	.33	.22	.16

that of those completing primary, 83 percent then went on to high. Computing the transition probabilities isolates each level of schooling from the effects of shifts in probabilities at earlier levels. Multiplication produces the probabilities for the whole cohort, as .85 x .83 or 70.6 percent reported some high school attendance.

The transition probabilities in Table 2 are as close to identical in computation as possible to those given for the U.S. by Mare (1981), except for the different treatment of the postsecondary levels discussed above. Comparing the Canadian results to Mare's data (not given) shows Canada has lagged throughout this century in both the proportions completing primary schooling and those entering high school, but has been catching up. For Canadian males at the beginning of the century, the probability of completing primary schooling lagged 17 points behind the U.S. The most recent cohort shows only 2 points difference.

It is at the next level of schooling — the completion of high school — that the greatest U.S. Canadian difference emerges. Among those who entered, some 91 per cent of the most recent U.S. cohort successfully completed high school; in Canada for the same cohort only 73 percent of the males and 76 percent of the females did so.[1] The percentages have not been so low in the U.S. since the 1912 to 1916 cohort, and Canada is falling behind rather than catching up. In the oldest cohorts, 70 percent of U.S. males who entered high school subsequently completed and 62 percent of the Canadian males did so. This difference of 8 points widens to 18 points in the most recent cohort of males. High school dropouts are now rare in the U.S. but still common in Canada. As a result, for the male cohort born 1947-51 only 12 percent in the U.S. entered the labour force with less than high school graduation compared to 33 percent in Canada.

The U.S. analysis gives an estimate of some 55 percent of those completing high school going on to some form of college. For Canada, with a broader definition of postsecondary education, the equivalent percentages are 70 for males and 69 for females. More closely equivalent data would probably reduce this gap or even reverse it, but the propensity to continue into some form of postsecondary education is substantial in Canada. Among those who do enter some postsecondary schooling, in Canada, a total of 49 percent of males and 29 percent of females enter university. Multiplying the probabilities (.70 x .49 for males and .69 x .29 for females) provides estimates that 34 percent of the males and 20 percent of the females with high school graduation have entered the Canadian universities. No equivalent estimate is possible from the U.S. data. Among those entering "college" in the U.S. a total of 55 percent of males complete the program, defined as attending four complete years. For Canada the equivalent, defined as obtaining the B.A., is 56 percent. Finally, among those who complete university, 50 percent of the males proceed to postgraduate work in the U.S. and 47 percent in Canada.

Despite the problem of equating Canadian and American postsecondary systems, the two nations show a common and interpretable pattern. Unlike the lower levels of school, at the postsecondary level there is no clear trend toward higher transition probabilities. The final cohort must be discounted here since it includes many with incomplete education. Among the oldest males, 70 percent of those who completed high went on to some form of postsecondary, and this rises only to 74 percent in the cohort born in 1942-46. For the same cohorts the percentages are 69 and 73 for women. Among those going to university, the trend varies irregularly from 47 percent to 54 among males and from 28 to 30 percent among women. Rates of completing university after having entered are again essentially stable, ranging irregularly for males from 50 to 59 percent and from 38 to 49 percent among females, again excluding the youngest cohort. The rates of attending post-university appear to fluctuate haphazardly across the cohorts.

Thus in Canada, and for males at least in the U.S., there is little trend in the propensity to seek out or complete training at any level beyond high school. In both countries the changes in rates of attendance at the highest levels of schooling have resulted almost solely from changes at the lower levels, particularly in the proportions completing high school. American academics note that as high school completion is now almost universal and the transition probabilities beyond this level are stable no future growth in university enrolment, beyond general population growth, should be expected. In Canada, the important dynamic, the completion of high school, is far from universal and it is showing a slow upward trend. Thus gradual increases in the Canadian university population should be predicted.[2]

Evidence from the Canadian Census

Table 3 parallels Table 2, giving the transition probabilities for males and females, by cohorts, based on information from the 1981 census of Canada. Differences in the

Table 3

Probabilities of Proceeding to the Next Level of Schooling by Cohort, from the 1981 Census of Canada

		Cohorts born											
		up to 1906	1907-11	1912-16	1917-21	1922-26	1927-31	1932-36	1937-41	1942-46	1947-51	1952-56	1957-61
Complete Primary	M	.56	.65	.71	.75	.77	.79	.83	.68	.92	.95	.97	.97
	F	.66	.69	.74	.76	.78	.61	.84	.88	.91	.95	.98	.98
Some High School	M	.64	.68	.72	.76	.78	.81	.84	.89	.93	.95	.97	.96
	F	.70	.74	.77	.79	.82	.65	.66	.91	.94	.96	.97	.97
Complete High School	M	.55	.55	.57	.60	.62	.64	.66	.71	.76	.79	.74	.61
	F	.56	.55	.53	.53	.56	.58	.59	.64	.71	.76	.75	.69
Postsecondary	M	.79	.77	.77	.79	.81	.80	.81	.82	.82	.82	.78	.62
	F	.73	.74	.70	.70	.70	.71	.71	.72	.73	.71	.69	.60
Some University	M	.52	.47	.42	.41	.44	.41	.42	.45	.47	.47	.42	.23
	F	.33	.35	.35	.33	.32	.34	.34	.37	.40	.44	.41	.25
Complete University	M	.62	.57	.56	.58	.59	.60	.60	.62	.64	.61	.56	.29
	F	.32	.33	.33	.36	.36	.41	.40	.43	.48	.55	.56	.34
Postgrad	M	.30	.33	.35	.32	.33	.38	.41	.43	.38	.28	.17	.06
	F	.29	.33	.33	.31	.31	.31	.31	.30	.28	.24	.18	.07

Source: Custom tabulation from the 1981 Census of Canada. Computations exclude those currently attending school full time.

question wording and tabulation categories result in a somewhat different table and one which can less readily be compared to the U.S. results. As a second source of data for Canada, Table 3 modifies some observations based upon Table 2 and confirms others.

The first observation from Table 3 is that the long-term trends both in completing primary and in subsequently attending high school have continued throughout the late 1970s, now approaching 98 percent for both males and females. The census results also confirm that the proportions completing high school are appreciably lower in Canada than in the US, and that the difference is not eroding. The two further cohorts provided by the census show generally lower rather than higher rates of high school completion than did the final cohort of Table 2.

The census data detect a much stronger trend across the cohorts in the proportions completing high school than is shown in Table 2, possibly owing to different classification of those who have attempted some postsecondary training, as mature students, without having high school completion. While the sample showed an increase of only 10 percentage points across 45 years, the census finds an increase of over 20 points across the equivalent cohorts. This would be crucial to any prediction about how quickly Canada is likely to approach the U.S. rates of high school completion. If the census trend were to continue, the catch-up to current U.S. levels would be achieved before the year 2020 — the sample suggests a much later date. Evidence from the final cohorts in the census hints that the trend may, however, be slackening — the falloff in the final cohorts at this level is greater in the census than was observed earlier in the sample or in the 1976 census (Statistics Canada, 1978).

Rates of attendance at postsecondary levels given high school graduation appear higher in the census data than in the sample, at least for males, and the census confirms the absence of any trend in the rate. The falloff in completion rates for the youngest cohorts at these higher levels of schooling is again the inevitable consequence of incomplete education.

The census estimates for attendance at university, given some postsecondary, are higher than in the sample, particularly for females, partially because academically oriented programs in community colleges are included as "university" in the census but not in the sample. However, other factors must also be at work, since the attendance at community college cannot have been frequent in the earliest cohorts. In any case, for the men, the census confirms the observation from the CMS sample that there is virtually no trend toward greater attendance at the university level given entrance into postsecondary education. Some evidence of a modest trend can perhaps be seen in the data for females. Little trend for men is to be observed in the rates of completing the university work after having entered although there is some positive direction. The trend is larger for women. Finally, the census gives much lower estimates of the proportions with the B.A. going on to further work.

Socioeconomic "Bias" in Schooling

We now return to a more intensive analysis of the CMS data, and the issue of ascription as an explanation for the under-education of the Canadian population. Following Mare (1981), logistic regression models were constructed for educational transition probabilities In specifying the model, we built, as noted earlier, on Guppy et al. (1984), and Wanner (1986). The strategy was to assemble summary indicators for three broad groups, or "sets" (Cohen & Cohen, 1975) of background factors. The first combined information on the city size and region characterizing the respondent's childhood years. "Family background" forms the second set and comprises essentially the variables analyzed by Warmer, although the scheme is rather more exhaustive and definitions sometimes different. Finally, the variables describing the respondent's ethnicity, religion, country of origin, and language were combined into an ethno-religious set. The conceptualization of sets resembles one developed by Beach and Finnie (no date). An important part of our strategy was to minimize missing data. Missing data, when more than trivial (in which case means were inserted but no further action taken) were handled using dummy variables (Cohen & Cohen, 1975).[3]

Along with the three summary variables, gender and age were analysed. Gender is important, of course, because studies of access to university (e.g., Anisef, 1977; Breton, 1972; Porter, Blishen & Porter, 1973) have consistently revealed important sex-role differences. Age has usually been handled by Mare (1981) and others by computing separate regression equations for age bands, coded as narrowly as the analyst dares. A cleaner procedure, followed here, is to retain the reality that age is continuously distributed, and enter years of age directly into analysis, as a main effect and in interaction with gender.[4]

The strategy entailed, then, a model with seven main effects — community, social background, ethnicity, gender, age, and, to correct for aberrant results for the youngest and eldest cohorts, dummy variables identifying under 27 and over 76. Education among the under 27s is biased by programs not yet complete and for the cohort aged over 76 educational attainment may relate to mortality. Since the analysis was intended to yield the same information given by separate runs for combinations of age and gender, the three sets, community-region, family background, and ethno-religion, were specified in two way interaction with age (linear aspect) and gender.

Logistic regression results from the models, for the seven education transitions starting with completes primary and culminating in completes postgraduate or professional education, are presented in Table 4. Logistic regression uses a dependent variable of the form log (p/1–p) where p is the probability of (in this case) transition to a higher education level. See Mare (1981) for details. The first column in each section presents the estimates for a main effects model (model 1) while interactive effects are included in the second model. The first two terms in the main effects model, gender and age, express, with statistical control for background endowments, findings already seen in simpler form in Tables 2 and 3. Thus, the coefficient of –.041 for age in model 1 reveals for example that older respondents are less likely than the young to have completed primary school, assuming equivalence on social background (as understood in the threefold sense defined above).

Table 4a
Logit Regression Estimates of the Determinants of Transitional Probabilities

	Completes Primary		Some High School		Completes High School		Postsecondary	
Model	1	2	1	2	1	2	1	2
Intercept	2.810**	2.818**	1.656**	1.841**	.599**	-.756**	-.249*	-.436
Main Effects								
Gender.	.075	.102	.015	-.054*	.014	-.493**	-.013	-.638**
Age	-.041**	-.042**	-.033**	-.034**	.001	.004	-.005**	.002
Community, region	8.810**	10.805**	6.645**	9.090**	.962**	9.994**	4.808**	1.229
Family Background	12.775**	10.913**	9.275**	11.375**	.574**	6.930**	4.971**	6.661**
Ethno-religion	8.469**	-.092	7.196**	1.338	.472**	8.847**	5.138**	4.015
Young	.412**	.396*	.635**	.622**	.235**	.223**	-.353**	-.363**
Old	.440**	.362*	.068	.044	.032	.005	.107	.080
Two Way Interactions								
Gender*Age		-.001		.007		.008**		.011**
Gender*Community		-2.232		-1.536		-3.052**		5.947**
Gender*Background		.462		-.839		.965*		.697
Gender*Ethnicity		5.134**		6.448**		-3.117*		.932
Age*Community		-.011		-.030		.056		.052
Age*Background		.030		-.042		-.044**		.051**
Age*Ethnicity		.098**		.006		-.023		.001
Community*Background		-6.534		10.283		-4.060		-5.937
Community*Ethnicity		-19.488		-28.216		13.559		-6.911
Background*Ethnicity		5.979		17.202*		-4.577		2.286
"R Squared"	.538	.541	.445	.449	.186	.190	.147	.149
N (weighted)	40,709		33,623		27,376		18,713	
(used in analysis)†	10,151		10,357		10,605		10,950	

* p < .05 ** p < .01

† Cases randomly omitted to match computer resources

Back transformation (explained in Mare, 1981) clarifies the meaning of effects in the model. A sub-population possessing a combination of background circumstances entailing a logit of .5, for example, would carry a .62 probability of completing primary school. Those a generation (say, 30 years) younger with the same background endowments would hold a logit $[(-30)(-.041) + .50] = 1.73$, equivalent to p of .85, 23 points higher than for the first group. But if the comparison involved a high SES endowment group with, say, $p = .90$, the 30 years later increment would only rise to $p = .97$. The purpose of logit transformation is, of course, precisely to statistically model the so-called "ceiling effect" in educational transition. If 99 percent of one group achieves primary school, for example, the theoretical maximum for another can only be one percentage point higher, and the transformation corrects for that.

Table 4b

Logit Regression Estimates of the Determinants of Transitional Probabilities

	Some University		Completes University		Completes Postgraduate	
Model	1	2	1	2	1	2
Intercept	-2.092**	-2.717**	-.767**	-1.043**	.583**	-.854**
Main Effects						
Gender	-.963**	-.604**	-.461**	-.509	-.880**	-.684*
Age	-.001	.010	-.012**	-.015	.013**	.020**
Community region	5.063**	8.176**	4.335+*	1.525	4.602**	1.566
Family Background	4.813*.*	6.110**	4.341**	5.466**	5.069**	6.914*
Ethno-religion	4.815**	7.775**	4.434**	6.639**	4.793**	2.255
Young	-.136*	-.153*	-.463**	-.457**	-1.032**	-1.028**
Old	.118	.062	-.059	-.074	.028	.131
Two Way Interactions						
Gender*Age		-.003		-.009		-.002
Gender*Community		-1.582		-.079		1.051
Gender*Background		-.708*		2.056**		-1.409
Gender*Ethnicity		.565		-.329		.709
Age*Community		-.054		-.134+*		.049
Age*Background		-.019		.006		-.041
Age*Ethnicity		-.053**		.015		.049
Community*Background		2.367		19.185*		14.053
Community*Ethnicity		-23.321*		24.103*		2.819
Background*Ethnicity		-3.419		-10.697		4.965
"R Squared"	.152	.153	.061	.066	.133	.135
N (weighted)		12.979		4.924		2.528
(Used in analysis)		12.979		4.924		2.528

* p < .05 ** p < .01

Gender is scored in the model as male = 0, female = 1, meaning that a positive logistic regression coefficient denotes high completion probability for women, and *vice versa.* The coefficients are positive at early transitions, but this net educational advantage of females over males declines at later transition levels, the Table 4 main effects (model 1) reveal. By the non-university postsecondary level, the coefficient changes sign, meaning that from this level onward males gain the advantage over women. None of the (model 1) positive coefficients for females, at early transition levels, achieves .05 significance. Since the case base in each computation is large (around 10,000), it can be concluded that even in a statistically powerful test the sex difference is too trivial to be generalizable to the population. In contrast, the coefficients for some university and higher levels are .01 significant, even for transition levels where case size falls below 10,000.

The main effects for age capture historical development of the Canadian education system, but a development adjusted for changes in the Canadian occupational structure, urban/rural and provincial mix, ethno-religious composition, and even (from the control for parental education) for educational development a generation earlier. The main effects reveal that such is the strength of historical change in educational completion levels that even in this rather 'artificial sense the probabilities of transition have increased over time, to a statistically significant degree at most transition levels. For example, of two people holding an identical socio-demographic profile but aged, say, 30 and 60, the odds of educational transition would favour the 30 year old — the person more recently moving through the education system — at every level excepting only the final transition, the completion of postgraduate work. The age coefficients reveal, however, this net historical trend to be most pronounced at early transition levels. In particular, the failure of Canada to achieve historical upgrading in high school graduation, noted in earlier discussion, reappears in Table 4 as a system characteristic. That is, the failure is not attributable merely to shifts in the social composition of succeeding historical cohorts (compare age main effect of B = –.033, significant, for some high school, –.001, not significant, for completes high school).

The three social background factors, community/region, family background, and ethno-religious background, reveal main effects typical (e.g., Mare, 1981) of educational transition analysis. For each component of background, ascription is greatest at early transition levels such as the completion of primary, and dissipates with succeeding levels. As noted earlier, socioeconomic bias does not disappear, because the probability of completing a level of education is derived by multiplication of probabilities for preceding levels. Nevertheless, the Table 4 main effects for endowment factors underline that if a disadvantaged category within a society can be brought through the highly ascriptive earlier hurdles of educational completion the final gates pose diminished barriers, even though being far from fully egalitarian. Two deviant patterns qualify that general conclusion. On balance, completion of non-university postsecondary education is less ascriptively determined than completion of the next level, some university (compare main effects "R-square" of .147 and .152 respectively).[5] "Non-university postsecondary" is an amorphous collection of various educational types, but it is fair to conclude that institutions such as Ontario community colleges and CEGEPS in Quebec have fulfilled some of their designers' hopes for broadening access to higher education. Postgraduate completion presents the second deviant pattern, with a main effects "R-square" of . 133, more than twice as large as the "R-square" for completes university, meaning that access to this level remains constricted.

The discussion of main effects in Table 4 is completed by noting that the dummy variable code for cohorts aged under 27 proves of enduring importance (and statistical significance) at every transition level. The dummy code for the aged 76 and over cohort is, according to the Table 4 significance test for main effects, a peculiarity of the completes primary level.

The interaction models in Table 4 investigate the possibility that slopes for predictors are inter-dependent. The interactions as a whole add significantly to the overall explanatory power of the model for all transition levels except the completion of postgraduate work, as tested using the chi square distribution for the decrement in the log likelihood ratios.[6] Gender interacts significantly ($p = .05$ or lower) with age, community, family background, and ethno-religion although the alignment of significant terms varies across transition levels. At completes primary, for example, the term for gender by ethno-religion is .01 significant. The interaction term coefficient, 5.134, means that the main effect of gender becomes strongest for women of high ethno-religious status and, equivalently, that ethno-religious ascription in primary school completion is greater for women than for men. In total, across all seven completion levels, ten interactions by gender are significant, and seven of these are positive. We conclude, on balance, that the Canadian educational system acts more ascriptively upon women than on men.

It is already known from the main effects that historical upgrading in Canadian education is massive. The interactions for age show how Canadians of varying endowments have shared in the upward trend. Five of the 21 age-related interaction terms with social background pass significance, all at the .01 level, and four of these are negative, meaning that ascription assumes greater importance in recent cohorts. The interactions seem randomly spread over the three varieties of endowment — community/region, family background, and ethno-religion. At the completes high school and non-university post-secondary levels, for example, family background interacts negatively with age. At some university, in contrast, ethno-religion generates the trend.

The finding of traces of increasing ascription in education concurs with Mare's results and, in Canada, with Wanner's (1986) analysis of a simpler model for native-born males only. Guppy et al. (1984) prove correct in predicting that declining ascription for father's occupation would not hold for ascription understood in a broader sense. An attempt at interpretation of the interactions with age appears below.

CONCLUSIONS

Transition probabilities by cohort, whether from the CMS data or the census, revealed steady progressions towards virtually full attendance at the lower levels of schooling in Canada. At this point the Canadian system duplicates the U.S. pattern, with some years of lag, and the lesser affluence of Canada could explain the lag. At the level of high school completion, however, rates in Canada are much lower and there is only a modest historical tendency for them to rise. Given this, an attempt to explain the difference from the U.S. would require an immediate complication of "lag theory." Beyond the level of high school completion the Canadian data detect yet another pattern. The Canadian system becomes, with the exception that lower levels of high school completion reduce the numbers of starters in the higher levels, otherwise remarkably similar to the US. Thus there is considerable complexity in comparison of the two systems.

Mare, using logistic regression, found for the U.S. that the power of social stratification variables, and of other sociological variables, diminished in capacity to predict successful transitions at the higher levels of schooling. Our finding is essentially the same, although the drop is less regular in Canada (compare the R squares of Table 4 with Mare, 1979, p. 66). At the lowest levels of schooling the "R square representing the explanatory power of our several social variables is as high as 54 percent. At the highest levels it is as low as 6 percent. The postgraduate level is a major exception, with the statistic some ten times larger in Canada than in the U.S. Inclusion of women in the sample in Canada is part of the reason for this, but is not likely to be the whole. With these exceptions noted, in Canada, as in the U.S., the influence of social background peaks in the earliest years of school and subsequently diminishes.

The Canadian model appears to produce higher variance explained than does the U.S. at most of the levels. Admittedly, more variables appear in the Canadian analysis, including age, but it is doubtful this is the whole explanation. As Porter (1965) had suspected, sociological factors play a bigger role in determining educational attainments in Canada than in the U.S. This may be called "ascription," if understood in our broad sense, encompassing more than merely the core variables analysed by Wanner (1986). The extremely large R squares for the lowest levels of schooling suggest that the school system is failing to engage at the earliest levels some sociologically identifiable pockets of the population. Parental education is a powerful factor in the earliest levels implying that the school system falls to absorb those coming to it from families with very poorly educated parents.

The logistic regressions contribute in other ways to increasing understanding of the school system. The main effects model shows, for example, that the trends over time in the completion of primary school and entering high school are sufficiently powerful to hold even with controls for social background. The absence of any trend in the proportions proceeding to postgraduate training and the weakness of the trend in the completion of high school are also confirmed. Differences by gender, on the other hand, prove weak at the lowest levels while they are of considerable strength, and always to the disadvantage of the females, at the university and postgraduate levels. The main effects establish that as well as the "family background" set of variables having importance so also do the sets measuring community-region and ethnicity-religion. The variable identifying those in the oldest cohort was included because of a concern that differentials in mortality might lead to bias. The fear seems to have been unwarranted. The variable identifying the youngest cohort was included to compensate for incomplete education, and it does exert the anticipated effect on the upper transitional levels. Unexpectedly the variable is also a significant factor at the lower levels, and in these cases the sign on the coefficient is positive, signifying high completion. This indicates that imposing linear assumptions provides an imperfect fit with the data.

In the second set of logistic regression models, interactions with gender are recurrently significant. The results are scattered, consistent with the idea that the causal structure at one transitional level may be different from that at another. On balance, one is led to conclude that ascription operates somewhat more strongly upon women than men.

The interaction effects also allow for investigation of the classic sociological issue of whether ascription is growing or diminishing in strength. Again if attention is focused upon the coefficients passing significance tests the evidence is that ascription is growing. This may be added to the earlier suggestion that in general ascription appears stronger in Canada than in the U.S. Again, it seems that the two countries are far from identical in educational attainment. Mare's analysis of the U.S. began from the seeming anomaly that in the U.S. the effect of social background on years of education has been invariant over the 20th century. The stability was illusory, he showed, the result of two contradictory trends: (i) a decrease in ascription, resulting from rising proportions reaching high transition levels (where, as noted above, ascription was weak), (ii) a net increase in ascription, due to the importance of social background rising over time. These two forces which so neatly cancelled out in the U.S. do not do so in Canada. Rather the first of the two trends has overwhelmed the second. Most probably this derives from the particular stage of development of the Canadian system. A large component of the Canadian population in the older cohorts was lost to the school system at the end of the primary years — a point at which ascription is strong. More recently the first major point of loss is at the completion of high school, where ascription is weaker. It is important to recognize that Canada is a newly industrialized society. Features that are relatively distant history in the U.S. — the first post-industrial society — remain recent and sociologically important to Canada.

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Notes

[1] Here and throughout estimates may differ from reports based on institutional statistics. It is assumed that any bias in the survey data is a constant and would not affect comparisons within or between survey data sets.

[2] Table 2 has been regenerated excluding the French (defined as those "most comfortable" in French) the rural population and finally the foreign born. None of these changes seriously reduced the magnitude of the U.S.-Canadian differences.

[3] The reduction of many variables, over 50 in all, into three sets was accomplished though a procedure resembling the first stage of two stage least squares. Details on this and other technical matters can be obtained from a working paper (No. 137) of McMaster University's Quantitative Studies in Economics and Population Series.

[4] In an equation:

$$Y = b_1X_1 + b_2X_2 + b_3(X_1)(X_2)$$

the first two terms after the equals sign are the main effects, while the third is an interaction effect. The interaction effect is tantamount to computing the equation $Y = b_1X_1$ separately for each level of X_2 or *vice versa.*

[5] The quotation marks denote that logistic regression calculates an R square analogy, rather than a true R square in the Ordinary, Least Squares sense.

[6] With 10 degrees of freedom. the change in the likelihood ratio chi squares are: completes primary, 42.7; some high school, 48.0; completes high school, 49.4; postsecondary, 42.3; some university, 24.4; completes university, 32.6; post-graduate, 6.5. Thus all but the final are statistically significant.

The effects of three way interactions were also tested. Only two passed .05 significance — (i) to the lower order effects should be added the information that the combination of female gender, old age (i.e., schooling early in the century) and high socioeconomic background detracts from the probabilities of achieving the "some university" level, while young males from lower socioeconomic backgrounds enjoy enhanced odds; (ii) for "complete post-graduate" work, the effect of ethno-religious status has decreased over time for males, but increased for females. It is thus small wonder that the two way term for age by family background failed significance for males and females merged.

Education, Attitudes, and Language of Higher Education: Francophone Students in Northern Ontario

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ABSTRACT

Data from 1586 Francophone students in Northeastern Ontario concerning their attitudes towards French and English show seven independent factors affect linguistic beliefs. Three factors — believing French unimportant, believing English practically dominant, and believing their French inadequate — lead students to continue their postsecondary education solely in English. Believing French more pleasurable is positively, and believing English superior is negatively, related to continuing postsecondary education solely in French. Educational level is negatively related to believing English superior and to believing French unimportant but positively related to believing English dominant, French pleasurable, and their French inadequate. Policy should therefore focus on countering the belief in English dominance and the belief in the inadequacy of their ability in French.

RÉSUMÉ

Les données recueillies par Laflamme et Dennie (1990) auprès de 1586 étudiants francophones du Nord-Est de l'Ontario, données portant notamment sur les attitudes envers le français et l'anglais, révèlent sept facteurs déterminants des croyances

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linguistiques. Trois facteurs — croire que le français n'est pas important, que l'anglais est en réalité dominant et que le français qu'on parle est inadéquat — incitent les étudiants à poursuivre leurs études en anglais seulement. Croire que le français constitue, plus que l'anglais, une langue de plaisir est positivement relié au fait de poursuivre des études postsecondaires en français seulement, alors que tenir l'anglais pour une langue supérieure est négativement relié au fait de poursuivre des études en français seulement. Le niveau d'éducation est négativement relié à la croyance en la supériorité de l'anglais et à celle en la non-importance du français, mais il est relié positivement au fait de croire en la domination de l'anglais, au français comme langue de plaisir et au manque de compétence à s'exprimer dans sa langue. Par conséquent, les décisions politiques devraient veiller à contrecarrer la croyance en la domination de l'anglais et celle en l'incompétence de la personne dans sa langue.

INTRODUCTION

Relatively few Francophones in North Eastern Ontario undertake university studies. Some of those who enroll elect to continue their studies entirely in English. An important role of bilingual universities outside Quebec and their supporters is to encourage students to continue their education in French. This means convincing students who can continue in French to do so. When Francophone students choose to pursue some or all of their post-secondary education in English, this represents a serious problem for the continuation of academic French culture in North Eastern Ontario. It creates an administrative problem for educators committed to providing a range of choice for Francophones in higher education, because provision of courses often requires demand. Maintenance of the demand for Francophone courses is an important policy objective for bilingual universities.

Pursuing this objective requires understanding students' choices which in turn means finding out students' own reasons for selecting programs. Choices are made in the context of beliefs about the social world and one's place in it. In order to influence the choices, it is necessary to identify the main beliefs and attitudes. Such main beliefs and attitudes are rarely individual and isolated; they occur in constellations, influence the answers to a number of questions, and affect multiple aspects of action. Choosing to follow instruction in English or in French is rational in the sense that it is consistent with the constellations of attitudes which individuals hold. Altering such choices requires strengthening or weakening beliefs related to these attitudes. This process is neither instantaneous nor impossible to achieve. To be most effective, it requires empirical investigation of the relationships between attitudes, actions, and choices.

Laflamme and Dennie (1990) showed that there is a genuine Francophone Ontarian culture with common elements underlying the apparent conflicts. An important aspect is the dialectic between self-esteem and the vision of the other. Their conclusion is that Frenchness (francité) tends to increase with education and age. "Quoi qu'il en soit l'instruction consolide de toute évidence le francophone dans sa culture" (p. 146).

Nevertheless, it is important to remember that individuals in practical situations have a wide variety of beliefs about language which are not always structured according to theoretical or philosophical classifications. This study uses factor analysis to look at the actual ways in which these beliefs are structured in the minds of students in the educational system in Northern Ontario. The intention of this article is to describe the inter-relations of linguistic attitudes as a precursor to the possible development of a theory and to show the relations of these attitudes to choice of language of further education and grade level as an aid to practical decisions about language policy. It answers three new questions. (1) How many independent dimensions are necessary to characterize the variation in students' attitudes towards the two languages? (2) Which dimensions influence students to continue their education in French? (3) How are these dimensions themselves influenced by the students' earlier education?

METHODOLOGY

Data were collected by Laflamme and Dennie from 1,586 Francophone students in North eastern Ontario concerning their attitudes towards French and English (Laflamme & Dennie, 1990). The language items in the original study consisted, among others, of a large set of statements about English and French language and culture. The item pool attempted to cover all of the attitudes towards language and language users which could be relevant in describing Franco-Ontarians. For each question, the respondent had to agree or disagree on a five-point Likert scale.[1] The variables used here were the language items, the grade, and the intended language of further education.

To categorize empirically the different aspects of beliefs about language, factor analysis with Varimax rotation was used. Where a variable loaded maximally on a factor on which less than two other variables loaded maximally, that variable was deleted. This result is a classification of items or beliefs into the smallest possible number of categories called factors which explain variation in answers. The procedure calculates a score on each of these factors.

To investigate the factors' effects on language choice for higher education, analysis of variance was used. Possible language choices were French only, bilingual, and English only. Analysis of variance shows whether there are differences among the three means. To find out which means significantly differed from others we used the Scheffé post hoc test, a relatively conservative test.

To investigate grade effects on belief patterns, analysis of variance for linear trends was conducted since the grade intervals are equally spaced. Interest was in the overall trends rather than in specific differences between particular means. A test for quadratic trend was also included in case a linear trend was not constant over the period.

THE DIMENSIONS OF LANGUAGE BELIEFS

The seven factors resulting from Varimax factor analysis which describe the constellation of language attitudes are presented in Table 1. Table 1 shows those variables which load on each of the seven factors. Ten variables which did not load on our factors were excluded from the analysis.[2] Only the highest loadings are presented for each factor, and each item is presented for the factor on which it has the highest loading.

The first factor represents the superiority of English culture. The three items loading highest on the factor relate to entertainment and its interest.[3] The first five items on this factor were classified as items concerning culture by Laflamme and Dennie. Of the last two, "English as a rational language" was classified as value and "English culture is the greatest culture in the world" was classified as supremacy of English. The factor then appears to represent the element of attachment and feeling for language in leisure activities, in activities which are not as strongly constrained by external norms. The item about rationality of English seems somewhat anomalous in this factor but it has a lower weighting. This factor represents significant agreement between the categorizations of Laflamme and Dennie and our empirical analysis which shows variables falling into their categorization of culture.[4]

The second factor represents the belief that French is not important (refer to factor 2 in Table 1). This factor seems to separate individuals who think French is important on a personal basis. Most of the items relate to the importance of the language of studying or of schooling. Thus we might say this relates to the import of French education. The first three items on this factor were categorized by Laflamme and Dennie as concern with language. Future encouragement and old-fashioned-ness of French culture were categorized by them as culture while the importance of a good job was categorized by them as value, and the pointlessness of fighting over French was categorized by them as supremacy. The fact that there is so much change raises a question about the uni-dimensionality of their concern for language category. More conceptualization is required in this area.[5]

The third factor represents the belief that in the world of practical affairs, English is dominant (refer to factor 3 in Table 1). Obviously, this factor represents the view that power in society is associated with English. Interestingly, respondents do not seem to differentiate greatly among economic, political, and scientific power. This may be a result of their position outside of the power structures. On this factor, all of the items were categorized by Laflamme and Dennie as supremacy. They also included under supremacy the beliefs that "English culture is the greatest culture in the world," "It is pointless to fight for French," and "Francophones should not ask for too much." That these latter three items are not included in this factor suggests that those answering the questionnaire differentiated the fact of power from feelings of pointlessness and cultural values in ways that Laflamme and Dennie had not considered.

The fourth factor represents the belief that leisure is more pleasurable in French (refer to factor 4 in Table 1). This factor represents the idea of French as fun. This differs

Table 1
The Seven Varimax Factors Underlying Language Items

Factor	Language Item	Weight
1	• Television is much more interesting in English than in French / La télévision est bien plus intéressante en anglais qu'en français	.75
	• The best films in the world are English / Le meilleur cinéma au monde est anglophone	.73
	• Popular songs are more captivating in English than in French / La chanson populaire est plus poignante en anglais qu'en français	.70
	• It's easier to read in English than in French / C'est plus facile de lire en anglais qu'en français	.52
	• English culture is much more interesting than French culture / La culture anglaise est plus intéressante que la culture française	.45
	• English is a more rational language than French / L'anglais est une langue plus rationnelle que le français	.43
	• English culture is the greatest culture in the world / La culture anglaise est la plus grande culture au monde	.42
2	• The quality of my French is not important / La qualité de ma langue française n'est pas importante	.62
	• It is important not to be too French / Il ne faut pas être trop français	.60
	• It is more important to study in high school in English than in French / C'est plus important de faire ses études secondaires en anglais qu'en français	.55
	• Our teachers don't encourage us to live in French in our schools / Nos enseignants ne nous encouragent pas à vivre en français dans nos écoles	.53
	• It is much more important to get a good job than to continue one's studies / Il est beaucoup plus important d'obtenir un bon emploi que de poursuivre des études	.48
	• It is pointless to fight for French; you have to be realistic; after all you can't teach all the English people to speak French / Ça ne donne rien de se battre pour le français; il faut être réaliste; après tout on ne va pas enseigner à tous les anglais à parler français	.46
	• French culture is old-fashioned / La culture francophone n'est plus à la mode	.38
3	• In reality, economic power in society belongs to the English / En réalité, le pouvoir économique, dans la société, appartient aux anglophones	.83
	• In reality, political power in society belongs to the English / En réalité, le pouvoir politique, dans la société appartient aux anglophones	.78

Table 1 (continued)

Factor	Language Item	Weight
3	• In reality, scientific power in society belongs to the English / En réalité, le pouvoir scientifique, dans la société appartient aux anglophones	.74
	• In society, in reality, people function in English / Dans la société, en réalité, on fonctionne en anglais	.47
4	• Francophones are more fun than Anglophones / Les francophones sont plus amusants que les anglophones	.75
	• The English don't know how to have fun / Les anglophones ne savent pas vraiment s'amuser	.66
	• I enjoy myself more in French than in English / Je préfère m'amuser en français plutôt qu'en anglais	.66
	• French is a language of life; English is a language of work / Le français est une langue de vie; l'anglais est une langue de travail	.46
5	• It's irritating to hear a Francophone speak English with an accent / Il est irritant d'entendre un francophone qui parle anglais avec un accent	.76
	• It's bothersome for a Francophone to hear another Francophone speak English in public when he/she has a French accent / Il est gênant, pour une francophone, d'entendre un francophone parler anglais en public quand il a un accent français	.73
	• I am ashamed to identify myself as a Francophone at a party / J'ai honte de m'identifier comme francophone dans un «party»	.43
6	• I am ashamed of the quality of my French / J'ai honte de la qualité de ma langue française	.70
	• I am ashamed to start speaking to other people in French / J'ai honte de m'adresser aux personnes d'abord en français	.62
	• The feeling of living in English is more natural than the feeling of living in French / Je ressens le goût de vivre en anglais comme étant plus naturel que celui de vivre en français	.44
7	• Francophones should not ask for too much because they might shock Anglophones / Les francophones ne doivent pas trop demander parce qu'ils vont choquer les anglophones	.70
	• French is a language of the heart; English is a language of the head / Le français est une langue de plaisir, l'anglais est une langue de tête	.56
	• It is not important to ask for services in French / Il n'est pas nécessaire de réclamer des services en français	.40

from the earlier factor which represents more structured entertainment. Laflamme and Dennie characterize all these items other than the enjoyment item as part of their value judgement category. Enjoying themselves more in French than in English is classified by them under culture. They also classify "English is a more rational language" and "It is important to get a good job rather than to continue studies" as part of value judgments. The specific value judgements which are joined here do relate to French people having more fun. Consequently, it is reasonable to distinguish between this aspect of values and value judgements in general.

The fifth factor represents the belief that a French accent is inferior (refer to factor 5 in Table 1). This factor might well be called Accent — Rejection or Accent — Inferiority. Presumably, it relates to self-esteem for a Francophone identity. All three of the items loading high on this factor are characterized by Laflamme and Dennie as part of shame; however, they also characterized the first two items on the next factor as relating to shame. Our analysis differentiates between two aspects of shame: shame at being a Francophone, and shame at the quality of the person's French.

The sixth factor represents a sense of shame at the quality of the respondent's French (refer to factor 6 in Table 1). This factor may relate to the belief that French is difficult to use — that respondents are made to feel badly about their French, in this case while speaking French rather than English. We can call this factor the Inadequate French symptom, the view that their French does not measure up to others' standards. That would diminish their taste for living in French. It is an important difference between our account and that of Laflamme and Dennie that this specific factor is separated out in our analysis. It indicates that the feeling of shame at the quality of personal French language differs from a general feeling of shame about being Francophone.

The seventh factor represents a belief that it is not good to insist on service in French (refer to factor 7 in Table 1). The items on this factor were classified by Laflamme and Dennie in the order in Table 1 as part supremacy, culture and concern for language. Indeed, the underlying basis for the constellation of these items is not clear. However, this factor may relate to a view that Francophones should not be active politically as a community and not take an individually involved position.

What the results of the factor analysis show is that attitudes toward language do not group into the categories one would imagine intuitively or even theoretically. Our account shows that the structure of beliefs with respect to these items is relatively complicated in the population in question. Factors where this analysis differs most from the theoretical account of Laflamme and Dennie (1990) are the superiority of English culture, the belief that French is not important, and the categorization of shame into two separate components. Further research is required to explain why beliefs are structured in this way.[6]

ATTITUDES INFLUENCING LANGUAGE OF POSTSECONDARY EDUCATION

One of the aims of analyzing the set of linguistic attitudes was to determine what kinds of attitudes and beliefs impelled students to continue their education in French. In this section, we analyze how the different factors relate to the intention to follow postsecondary education in French. It might seem to some that the effects of these beliefs on the probability of taking courses in French is obvious; indeed, one of the earlier reviews of this article suggested just that. However, it is important to provide empirical answers to this question. Our answers result from analysis of variance of the means on each factor for three groups: those who will take their studies in French; those who will take them in English; and those who will take them in both.[7] F statistics and p values are reported for each factor in Table 2.

For the superiority of English culture, factor one, differences among the three groups are significant. Those who plan to continue in French score significantly lower on this factor than the other two groups.[8] This indicates that a belief in the superiority of English inclines students to take courses in English or English and French in their postsecondary education. Understandably so, for a belief that they will learn more and be better skilled by taking some of their education in English would influence their choices.

For the second factor, that French is not important, again there were significant differences among the three groups. Those who planned to continue in English scored significantly higher than the other two groups. This suggests that a belief that the French language is unimportant influences students to follow their future education solely in English.

Table 2

Means and Analysis of Variance for Language Factor Scores in Relation to Planned Language of Further Education

	Planned Language Group Means			ANOVA	
Factor	French	E+F	English	F(2/913)	p
1	-.05*	.27	.48	14.2	<.001
2	-.10	.03	.63*	17.8	<.001
3	-.17	-.13	.35*	10.8	<.001
4	.24*	-.15	-.41	18.8	<.001
5	.16	.06	-.06	1.8	.17
6	-.13	-.03	.45*	11.4	<.001
7	.00	.04	.05	.2	.85

* Significantly different from other two means using Scheffé post-test

For the third factor, the belief in practical English dominance, again there were significant differences among the three groups. Those who planned to continue in English had significantly higher scores. This supports the conclusion that the belief in English dominance influences students to take courses solely in English. Underlying this influence may be a growing tendency to consider that education has only instrumental significance — that one pursues education in order to obtain a job, i.e., for only practical purposes.

For the fourth factor related to pleasure in French, means were again significantly different for the three groups. Pleasure in French inclined students to continue and take their higher education in French. Clearly, an affective attachment to French is influential in students' decisions. Many students want to study and work in the language which they enjoy.

Factor six, inadequacy in French, showed significant differences among the three groups. Believing one was inadequate in French was very likely to incline a student to continue his or her education in English. Tepperman's (1988) discussion of incapacitation may be relevant to this phenomenon. People who are incapacitated under one categorization are likely to reject that categorization and substitute an alternate categorization which does not incapacitate them. This is a common process for minority group members. Criticizing some Francophones for their French may cause them to shift their identity and allegiance away from the French language. In a widely cited study, Willis (1977) showed that working class students in an occupational stream in a Birmingham school created their own oppositional culture, rejecting the mainstream organizational school culture which defined them as unsuccessful and inadequate. It would seem that Francophone students who are poor in school may defend their self-esteem by rejecting the values of the French culture which is being imposed upon them. This phenomenon warrants further study, preferably using ethnographic methods.

The two other factors, factors 5 and 7, the belief that a French accent is inferior and the belief that it is not good to insist on service in French, were not significantly related to the choice of future language of education.

Thus, two factors separate those who plan to continue in French: belief in the superiority of English culture and belief in the pleasurableness of French. Three factors separate those who plan to continue in English: belief in the non-importance of French, belief in the dominance of English, and belief in the inadequacy of their French.

EDUCATION INFLUENCES ATTITUDES

Since some of the belief patterns are strongly effective in determining who will continue in French, it is important to check how these patterns change with grade level. Does the level of schooling increase or decrease belief in specific linguistic factors?[9] Grades 8 to second year of university or college are considered in this analysis. The main question here is whether or not there is a linear trend over the cycle. An additional question is whether this linear trend is constant over the period. The quadratic effect is a second order effect which essentially shows whether or not the linear effect is constant, or increases or decreases in slope, over the period. Means and significances for linear and quadratic effects are shown in Table 3.

For factor one, the superiority of English culture, there is a linear term and a quadratic term. The scores on this factor decrease significantly over the course of the student's career. Post-hoc tests show that most of the significant differences are between those in high school and those further advanced in education with those further advanced having lower scores. That is to say, as students proceed through the educational system, they are less likely to believe in the superiority of English culture.[10] There may be some influence of exit on this relationship in that some of those students who do believe most strongly in the superiority of English may switch to the English school system and not be tapped by the questionnaire. However, this is unlikely to be the sole cause for the relationship we have found.

Factor two, that French is not important, declines significantly over the period of education.[11] Table 3 shows that students as they continue in education are less likely to reject the importance of French. The change seems to be greatest between grades 10 and 11. Attachment to the French language is increased by the educational system.

Factor three, the belief in English dominance, increases significantly over the period of education, as shown in Table 3. Those with more education are more likely to believe that English is dominant. This belief increases in strength until grade 13.

Factor four, belief in French pleasurableness, significantly increases over the grade levels studied. Means are shown in Table 3. The significant quadratic component reasonably reflects the sudden increase on leaving elementary school and entering secondary school, but belief in the factor continues to rise thereafter. Those past grade nine are more likely to think that French is fun, and those in university or college are most likely to think this as well.

Factor five, the belief that a French accent is inferior, significantly decreases over the grade span as seen in Table 3. As people go up in grade level, they are more and more likely to believe in the acceptability of French in everyday and official life.

Factor six, belief that French is difficult to use, increases with education. Increases occur in grade 11 and then again in grade 13, as shown in Table 3. The more educated students are more likely to be ashamed of the quality of their French.

Factor seven, the belief that it is not good to insist on service in French, shows a significant decrease with level of schooling. Means are reported in Table 3. This represents a greater self-confidence in their linguistic community instilled by further education.

The effects of school level according to this study are to reduce beliefs in English cultural superiority, and in the un-importance of French. The effects of school level also increase beliefs in English dominance and in French as pleasurable and difficult to use.

Table 3

Means and Linear and Quadratic Trend Significances for Language Factors in Relation to Grade Level

	Means for Level of School and College or University								Linear Trend		Quadratic Trend	
	8	9	10	11	12	13	1	2	F	p	F	p
1	.30	.27	.29	.20	.11	-.07	-.56	-.62	154.5	<.001	25.6	<.001
2	.14	.17	.23	-.12	-.04	-.19	-.26	-.16	32.6	<.001	.21	.65
3	-.21	-.27	-.01	-.16	-.06	.35	.23	.28	50.2	<.001	.41	.52
4	-.48	-.13	.13	.04	.13	.07	.21	.33	68.7	<.001	10.81	<.001
5	.21	.15	.14	.07	-.18	-.00	-.25	-.25	38.48	<.001	.02	.90
6	-.05	-.07	-.14	-.03	.08	.24	-.04	.20	7.03	.01	.29	.59
7	.06	-.02	.21	.19	-.08	-.16	-.11	-.12	7.37	.01	1.44	.23
n	244	210	187	84	166	103	177	118				

RELATIONSHIPS OF EDUCATION TO ATTITUDE AND CHOICE

The results cast some light on the effects of schooling indirectly through attitudes on language choice. In Figure 1, the arrows on the left represent positive or negative influences of increased schooling on those attitudes which influence language choice. Arrows on the right represent the influence of attitudes on language choice. Although there are three possibilities in terms of language choice, the only significant differences were between factors which increased or decreased the likelihood of taking courses solely in French, or factors which increased the likelihood of taking courses only in English. None of the attitudes increased or decreased significantly the likelihood of taking courses in both languages compared to the extremes. Consequently, we can represent the results with plus or minus and a letter indicating the language which is affected differently from the combined other-language-bilingual group.

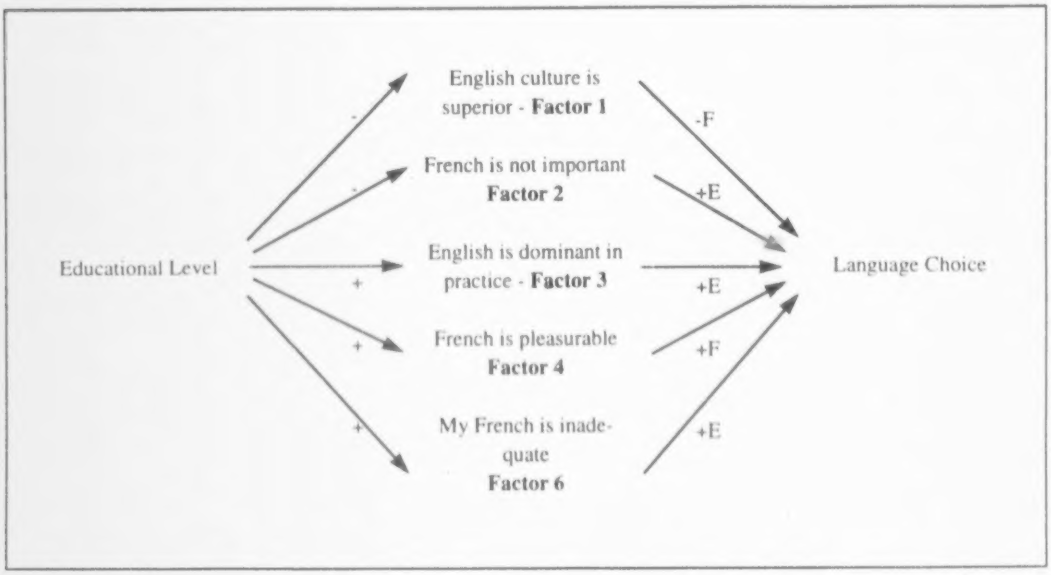
Educational policy has been formed with the intention of reinforcing the choice of the French language for university studies. Indeed, Laflamme and Dennie (1990) consider that Franco-Ontarians may be unique among linguistic minorities in that the more educated among them are the most likely to maintain their minority language. However, to the extent that schooling instills the belief in the practical dominance of English and to the extent that it makes the individual believe his or her French is inadequate, it may move students to switch to English for their future education. There are studies which consider the relative costs to the community of language choice. Colomer (1990) models language dominance. His model shows that changing from bilingual to English has more serious effects on the language than does changing from French to bilingual. Hakuta (1986) finds that active rejection of bilingualism by second or third generation immigrants is a major factor in linguistic assimilation in the U.S. In both cases, the costs to minority (French) language users are greatest when individuals give up bilingualism for dominant monolingualism.

CONCLUSION

In this study a number of attitudes related to French and English were shown to be describable in seven dimensions. Two of these dimensions of language attitudes, believing a French accent not inferior, and believing one should not insist on service in French, were found in this study to be unrelated to decisions about the language to use in education. Believing French pleasurable and not believing English culture superior inclined students to continue in French. Believing English dominant, French non-important, and their own French inadequate inclined students to continue in English. Level of schooling was generally associated with attitudes correlated with an increase in the probability of choosing French or a reduction in the probability of choosing unilingual English, except for two cases: level of schooling was associated with belief in the practical dominance of English and was associated with a self-conception that the student's own French was inadequate.

Figure 1

Diagram of association between level of school type of belief, and choice of language of further education


English culture is superior - **Factor 1**
French is not important **Factor 2**
English is dominant in practice - **Factor 3**
French is pleasurable **Factor 4**
My French is inadequate **Factor 6**
Educational Level
Language Choice
-
-
+
+
+
-F
+E
+E
+F
+E

+ = significant positive relationship
- = significant negative relationship
E = taking courses only in English
F = taking courses only in French

POSSIBLE IMPLICATIONS

In order to enhance the likelihood of students continuing their education in French, an attitudinal approach would concentrate on countering the two beliefs which schooling appears to foster and which decrease the probability of choosing French. The belief that English is dominant in practice could be somewhat countered by examples of the importance of French in community economic and political life. Examples of the practical use of French should be made available to students during their secondary school education. It is important to continue to emphasize such examples during students' postsecondary studies.

The other avenue would be to instill confidence in the students' ability to speak French. To the extent that schooling diminishes this confidence, it is counterproductive for the Francophone community. It is, therefore, important not to use self-esteem as a motivator for language in education since this threatens those who are less successful. A pronounced emphasis on grammar and grammatical correctness could have a significant negative effect on self-esteem. More avenues must be explored to teach the language without negatively prejudicing students' self-images.

It is unfortunate that a contrary sentiment has occasionally been expressed by some Francophone intellectuals in Northern Ontario. Defense of Francophone identity is seen as requiring rejection of Franglais and maintaining the purity of the French language. This has frequently been an issue in the personal lives of Francophone professionals who have themselves had to struggle to maintain an academic French style. Hence, it is almost automatic for them to denigrate French which does not meet their standards. My argument implies that they should not attempt to impose their standards; they should rather motivate by example and reward and encouragement, enticing students to want to develop their linguistic ability in an atmosphere devoid of threat and compulsion.

To develop a strong and vibrant Francophone community outside of Quebec, youth must be motivated to maintain their Francophone culture. The actual effects of school policies in this process can enhance or diminish this motivation. Ensuring that students gain self-esteem from their language and convincing them that English need not be dominant in practice are two steps which would help in this process.

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Notes

[1] The original book summarized these results and presented micro analyses of each question. It categorized language questions according to the pre-existent categories of shame, concern for language, supremacy of English, culture, and value judgements, in an attempt to describe, generally, the student population. It discussed individual beliefs. It is because the questions cover so

much more than have those in other studies that it is worthwhile re-analyzing the data to cast light on new questions.

[2] The following table shows the items not included in the factor analysis and the category assigned to them by Laflamme and Dennie.

[3] For those unfamiliar with factor analysis, it is important to emphasize that it is the items themselves which define the factor. Thus, what the factor represents must be guessed at from the common characteristics of the items which load highly on it.

[4] This is a narrower sense of culture than that frequently used by American sociologists (e.g., Parsons). Here, culture is used in the sense of Bourdieu (1979) and refers to non-work, chosen activities connected with leisure and consumption.

[5] Some issues related to this conceptualization are detailed in Endnote 6.

[6] Laflamme (personal communication) has expressed an alternative viewpoint. He claimed that the theoretical categories might be accurate and actual beliefs might be contradictory and inconsistent. In that event, it would be important not to base a theoretical classification on factor analysis. Some arguments for this general view are presented in Laflamme (1986). Imputations of rationality or contradiction to respondents are among the most heavily debated in the whole enterprise of social science with such heavyweights as Strawson, Quine, Habermas and Gellner taking positions. The argument made in this article that factor analysis is appropriate assumes that the categorizations in theory must reflect the categorizations made by respondents themselves, but this view is only one possible view which requires strong assumptions which cannot be justified here. However, if one accepted an alternative view that theoretical conceptions may be quite accurate but different from those of respondents, it would still be necessary and important to document these differences and to produce an account of the process producing the structure containing the specific contradictions. Under either choice of metaphysic, it is useful to discover which attitudes maximally cohere with one another.

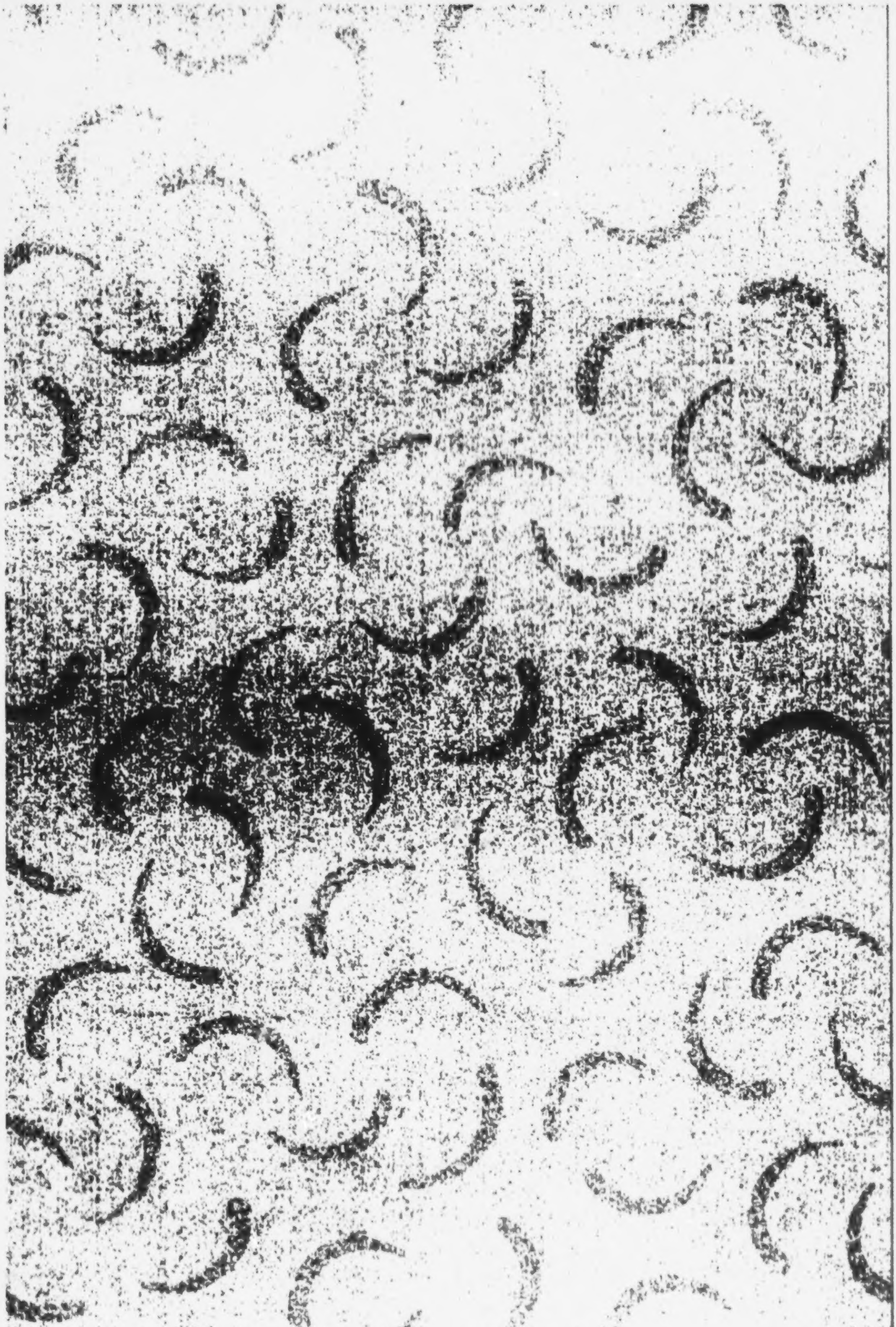
[7] Note that since the factors are orthogonal, their influences on any dependent variables are independent and separable. Hence, one-way analyses are appropriate.

[8] All specific differences cited in this section are based on Scheffé post-hoc tests as indicated in Table 2.

[9] It is unfortunate that the data only allow a cross-sectional analysis. The problem with this is that entry and exit effects are not controlled. In particular, some postsecondary students may have withdrawn from the sample. This change will likely effect responses to different questions differently. The most severe effect would be from students who change out of French education into English education and therefore are not sampled. We do not know if the attitudes of these students would be different. However, this certainly represents a small minority of the total group. In addition, as in all cross-sectional studies, there may also be a cohort or generational effect.

[10] This result was pointed out by Laflamme and Dennie (1990).

[11] This result was also shown by Laflamme and Dennie (1990).



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